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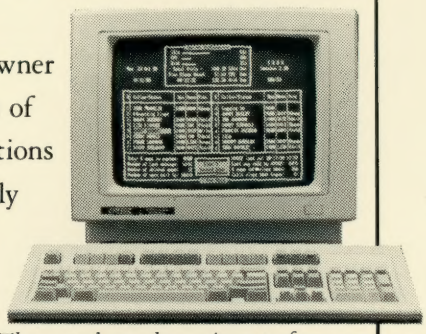

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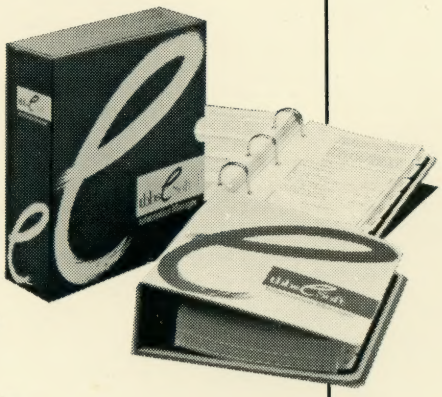

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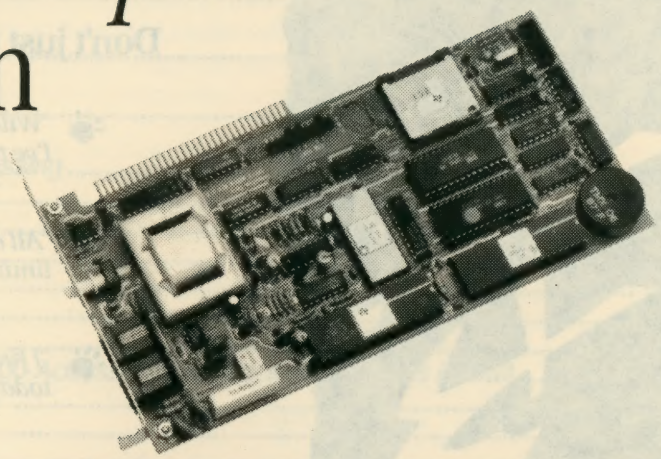

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EDITOR'S NOTES

Something significant is happening among commercial online services. Six months ago, CompuServe and Prodigy were both claiming roughly a half million subscribers. In late November, Prodigy claimed over **640,000** subscribers and more recently allude to nearly **700,000**. CompuServe now claims **740,000** subscribers. There is either a fantastic game of liar's poker going on here, or the online world is suddenly basking in **100%** annual growth rates - doubling each year.

We would love to believe in the latter. Are some of the 17 million modem owners suddenly deciding to finally use them to go online? Or does the desire to be known as the "biggest" and by implication "the best" online service provider simply lead to wholesale number fudging? My grandfather used to tell of a county in southern Missouri where some people hadn't missed voting in an election in over twenty years. He found that odd since he knew they had never bothered to vote at all when they were alive.

The online world in general is simultaneously fracturing into specialties and homogenizing into a recognizable picture. BBS have strained the limits of technology to duplicate features such as copious quantities of large population message conferences, multiline chat and games, and large software libraries previously the domain of the large commercial services such as GEnie and CompuServe. Many BBS systems are even now carrying daily news feeds such as USA Today and closing NYSE stock quotes. And BBS services typically operate at a fraction of the cost of large commercial online services. This has actually both put pricing pressure on the commercial services, and demonstrated to them that such services can and must be delivered to the population at lower and more predictable flat-rate prices. Prodigy, GEnie, and to a lesser extent CompuServe all seem headed toward lower cost connect time and at least some form of flat-rate access. They've learned the hard way that having a half - million subscribers at $10 hourly is great - unless most of them don't actually use the service often because of the fear of the "big bill". The dialing public simply doesn't want, and has never wanted, a monthly bill of unknown magnitude. BBS catered to that. The large systems knew this was the case but didn't believe it to be economically possible. As larger BBS systems proved it was, they've been forced to accept it.

At the same time, the BBS systems seem to be moving toward specialization. While most systems provide shareware downloads, message conferences, chat, and doors, increasingly they are building to the strengths of the software they use. Chat systems tend to become more chat oriented as time goes on, information services are increasingly developing more sophisticated databasing techniques, and the shareware libraries are offering more search and listing features, better protocols, and larger hard drives.

We see this specialization increasing with time while the networking of BBS continues simultaneously. At some point, you will see chat systems banding together in networks with shareware libraries, and information services via packet menus. Joe Venturelli of Paragon Communications is currently forming just such a master menu of BBS for a nationwide Tymnet linked service. While he may or may not eventually be successful, someone at some point is going to put all the pieces of the puzzle together. The U.S. Minitel Services company had this concept several years ago, but they hitched their wagon to the telco gateways, which are failing like peaches in a spring frost, and adopted the geriatric Minitel graphics standard. Operators had to invest $20,000 in a LESS capable interface than they could get from $25 shareware BBS packages to join the net and their callers had to pay ridiculously exorbitant clocked charges to access the services.

Eventually, someone will network BBS nationally. Anyone who wants will be able to join the net as an information provider and users will be able to connect to any BBS using packet at about $3.00 per hour transmission and whatever subscription fees are required by the individual BBS. This will be cheaper than dialing them long distance, and of course nothing for local calls. The BBS will network their conferences via packet in the same way and derive their income from the usual subscription fees - slightly higher than print magazine subscriptions.

I suppose this would have to be our Graphics issue. Alan Applegate brings a review of Jim Maxey's Event Horizons BBS, a system that has enjoyed enormous financial success solely due to the growing interest in high resolution color images. Aquila BBS, our cover story, is also heavily involved in graphics and many systems around the country are finding a graphics library a necessity to compete in the BBS world. Much, but not all of this revolves around pornographic images of women, poodles, an assortment of sexual appliances, and other assorted detritus of the sexually starved mind feeding itself bizarre images that strike sexual reality but a glancing blow. It would be easy to come down on what could be viewed as an unfortunate and non-representative segment of the BBS industry. We could very easily put on our black frock coat and do a few pages damning the deviants and likely receive approval and approbation from all as a result of our efforts. But pan out a bit and let's take a look at the whole forest.

Michelangelo isn't going to show up for 320 X 200 and sixteen colors. This sexual energy, however adolescent, is driving the development of an emerging online graphics standard with regards to the hardware used to display graphics, the file formats used to store and transmit them, and the software

used to create and to view them. The move to VGA and SuperVGA on personal computers is accelerating and it may well be that online pornography is in part driving this. The shareware packages we describe in this issue certainly come out of it. And the GIF standard started by CompuServe for a limited application has taken on a life of its own in the BBS world to serve it. Further, we suspect a large percentage of upgrades to VGA graphics hardware is driven by these images.

Seeing Word Perfect first in Hercules Monochrome Graphis and later in VGA color is pleasant, but for most users, it hardly justifies a $500-$700 upgrade. But when they see the photorealism of some of these graphic images on a good color monitor at high resolution, the response is invariably "I want it." They may not even have a propensity for pornography, but it does provide an eye-catching demonstration of VGA capabilities.

As interest in graphics spreads (so to speak), and as these tools become sharper, an environment should begin to form where true artists can express themselves online in ways we cannot at this point predict. We're seeing some creative moves already out of the pornographic realm initially toward advertising. Our cover girls have done some very attractive GIFs to promote their system, including **AQUILA.GIF**, a really beautiful space shot of earth from the shuttle with some information about their system, a promo for Aquila using our cover photo this month, and indeed they've done scans of our covers for the past several months. Bob Mahoney, of EXEC-PC, has made available a shot of himself in front of a Cray super computer. We're distributing a GIF of a group photo of BBS Software authors who were in the same room at the same time for the first time at last November's COMDEX. It was done for our January cover. But since many callers and BBS operators have no idea what the author of their package looks like, we would expect this GIF to become fairly widely available.

Soon this use of graphics should expand further. We know of one Northwest system operator who's working on a series of ski resort promo photos to be coupled with a ski resort database. You'll soon be able to shop for your ski vacation online and actually see slope maps and scenic photos online. Another is doing a series on cities using promo photos from various Chambers of Commerce. Soon, graphics files will emerge as a format for all sorts of "collections" of visuals - antique cars, sail boats, pets, birds of North America, etc. People will start to collect these collections of related photographs.

At that point, the stage is set for more artistic expressions of equestrian and western paintings, and so forth. We'd like to see the entire Remington series or Russell's westerns online right now. There likely will be something worked out to share museum pieces in data format. From there, we get into artists themselves directly using the online world as a forum for expression. And basically, we may wind up owing a fabulously rich world of online visuals to some obese babe with enormous 72-inch tits and a donkey.

Also in this issue, Applegate continues his series on modem basics by taking a look at file transfer protocols - what are they - why are they - and why anyone would care. We also welcome a new addition in Michy Peshota's satirical look at Crazy Merl the BBS system operator.

Our cover girls this month, shown in front of Chicago's Sears Tower, operate a very promising young BBS in the Chicago area titled AQUILA. From left to right, Kevin Behrens, his wife Kris Behrens, Steve Williams, and Chris Babb.

Finally, we welcome you, our readers, to the pages of Boardwatch. At popular request, we've added a "Letters to the Editor" forum and welcome commentary on the online world from those who know it best, the people who dial through the night.....

Jack Rickard
Editor/Publisher

Boardwatch Magazine

Volume V - Issue 2,
February 1991

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LETTERS TO THE EDITOR

We've received so many suggestions we include a letters to the editor column that we're going to assume our readers know best and acquiesce to their wishes on this matter. We rarely read such columns in other magazines and include this feature with some hesitancy. Unlike other editors, generally a jovial and all around nice bunch, I'm not a particularly nice person or pleasant fellow. So, direct your remarkably lucid, erudite, and concise comments regarding online issues, at your own risk, to Letters to the Editor,

Boardwatch Magazine, 5970 South Vivian Street, Littleton, CO 80127. We reserve the right to edit viciously for length and clarity.
Dear Jack;

You distrust the fickleness of the herd and reject electronic democracy (Boardwatch November, 1990) for, I suppose, the same reasons Tories opposed representative democracy. The great unwashed with short attention spans will be driven by demagogues, to say nothing of their inability to comprehend complexity.

I won't go into my reasons, but if we have a salvation, electronic democracy is it. I joined the WELL searching for people who see the potential of an electronic third political party, but met only Libertarians. I quit when they raised the monthly charge to ten dollars. And here you thought eight dollars was pricey.

Do you know anyone in CyberSpace working towards an electronic political party? If you do, please put me in touch.

You list addresses on FidoNet and Internet. Are there manuals describing how they work? Where can I get them?

Your prompt advice will be appreciated.

Very truly Yours,

Edward F. Kunin
Attorney at Law
Bridgeport, Connecticut

Edward:

I'll admit the debate is a bit shy of new. And there are legitimate and powerful points on both sides. While I do have reservations regarding the fickleness of the thundering herd, I'm also quite fearful of our fearless herd leaders and I do confess I'm somewhat enamored of the individual empowerment wrought by our electronic online society. For electronic balloting, someone will inevitably want to control the count to "make sure it's fair" and I fear that would lead to MORE government control of our online world. Even without direct electronic ballot, the rapid flow of information dramatically enhances the ability of individuals to effect change in government - as well as other areas. Even an electronic survey forum on a grand enough scale could have a powerful effect. Gallup Online?

Tim Stryker, of Galacticomm Software and author of Major BBS, announced in November plans for a ***Foundation for Electronic Democracy****. You may reach him by voice at 305-583-5990 or 305-583-7808 by modem. I'm not sure how he is coming along with the project but he sounded painfully sincere.*

The best reference I've found to Internet, FidoNet, and networking electronically in general, along with a good dose of freedom loving libertarianism and electronic democracy, is John S. Quarterman's ***THE MATRIX*** *- published by Digital Press. Unfortunately, it's a bit hard to find. I obtained a copy by ordering from the On-line Computer Bookstore in Sunnyvale at 408-774-0514 data 408-744-0511 voice. It's not catalogued but they can obtain it for you and their delivery was superb - within a few days.*

It is interesting to note that our future salvation through electronic democracy is appropriate at eight dollars monthly, and somewhat less so at ten?? What's the going rate for Freedom of Speech? - Ed.

Dear Boardwatch Magazine:

Could you please supply me with a list of people or organizations who put out "bulletin boards" for multiple listings related to Real Estate. Also do you have any information regarding computer information for Real Estate loans?

I am just starting to work in real estate investing and plan to buy a computer soon - don't really know what is available out there yet.

Donna Arnicar
Encinitas, California

Donna:

I'm a bit captivated by David Hakala's article in our January issue regarding the Resolution Trust Corporation. RTC will be disposing of the debris from the Savings and Loan Robbery of 1990 within the next few months. Business Information Network in Accokeek Maryland is operating a database of some 37,000 featured hovels and wrecks left from the 532 S&Ls that went under last year in what they refer to as ***RTCNet****. They also have some interesting real estate news/info online. It's actually an inspired online reference for bargain hunters. You can contact them voice at (301)292-9400 for the details of getting online there.*

Most areas have a service titled Multi List for licensed brokers and sales people and it is available online in your area. Contact your local brokers assocation.

As to computer equipment, the 80386SX machines with 40 MB hard drive and monochrome monitor are selling well right now and offer good value at an increasingly attractive price. New 20MHz versions don't add much to the price and operate a bit more quickly. Every mom and pop computer shop in the country is putting together very inexpensive boxes - usually based on equipment provided by DTK. Something in this range should run about $1100 to $1200. The bargains in 80286 machines are attractive, but unless you're really squeezed, avoid them. They work but their future is cloudy. The pricey 33 MHz 80386DX machines are generally for computer geeks and guys like me who sit and time their software with a stopwatch.

Of course, I have a special recommendation I always make to real estate agents. You definitely want a Taiwanese 80486 machine with 256 KB of memory, an off-brand 10 MB SCSI drive, Windows 3.0 running under Desqview running under another copy of Windows 3.0 with QEMM and Windows wrestling to see who gets to mismanage memory, and two LANtastic network cards in the machine so it can

*talk to itself. If Packard Bell makes such a thing that would be the brand to go for and a CD-ROM with about a dozen different setup access programs to further clarify the issue would be nice. An Anderson Jacobson 300 bps acoustic modem would work well with this setup - especially with the ubiquitous BITCOM communications software. Infoworld columnist Steve Gibson has his "**Dream Machine**" recommendation. I have my "**Hardware from Hell Penitence Platform**". Good luck and a most sincere welcome to the online world. - Editor*

TELEBITS

RUMORS, MIGHT BE'S, NUMBERS CAUGHT IN PASSING

Fujitsu is said to have developed a process to manufacture 64 Mbit DRAM chips at some reasonable cost. Previously, the processes required to etch .3 micron circuit lines was slow and expensive.

Pacific Bell is offering a new service to provide customer billing information on floppy disk with billing analysis software. The software/setup costs **$100** and there is a **$15** per monthly charge. But for companies/online services who can use the data to find out where their telephone dollars are really going, this may be a real solution.

Bell Atlantic is offering a device to port caller ID information to PCs. The **ClassMate** device plugs into an RS-232 serial port like a modem and also has two RJ-11's for telephone lines. It obtains power from the RS-232 port and provides a 31-byte string in ASCII text format to the port at 1200 bps each time someone calls. The ASCII text string contains the date and time of call and the number in the format **12/22 16:15 (303)973-4087 G**. It will also return an **OUTSIDE CALL G** string if the call originates from an area that doesn't generate Caller ID codes, or **PRIVATE CALL G** if the caller is using caller ID blocking. The device comes with a 6KB TSR program for the IBM that pops up a little window with the messages each time a call comes in. It's actually manufactured by MHE Systems Corp of Tustin California and is priced at a very reasonable **$49.95**. Call Bell Atlantic Business Supplies at **(800)523-0552**.

AT&T construction crews accidentally severed a half-inch fiber-optic cable under Newark New Jersey on January 4th. Over **60%** of the calls into and out of New York city were met with recorded messages noting that all circuits were busy and most of the areas airports were virtually shut down because flight controllers were unable to communicate. That a single cable break could cause that much disruption was a surprise to most observers. But fiber optic technology has caused the network to be somewhat more vulnerable to such accidents. The single severed cable had a capacity of **100,000** simultaneous calls. Service was out from **9:45** a.m. EST until about **5:30** p.m.

Bad news for those so infuriated with AT&T that they made the change to Sprint. The following Monday, Sprint construction crews severed a fiber optic cable in Indiana knocking out a major section of their long distance service for about five hours. Fiber optic technology allows an incredible number of telephone calls to pass through a single 1/2-inch cable. But as these are installed, the national network becomes increasingly vulnerable to construction mishaps.

IBM is scheduled to announce their laptop this February 26. Rumors indicate the machine will be a 20 MHz 386SX model with 2MB of RAM, 60MB hard drive, weigh less than 7.5 pounds and carry a reasonably aggressive price at under **$5500**. IBM is trying to ready the laptop for a U.S. Navy procurement bid for 75,000 laptop units.

PRODIGY WOES CONTINUE

Prodigy Services Corporation, beset by complaints from subscribers to the popular online service, continues to receive bad news. The company was forced to reach an agreement with the Texas State Attorney General to avert charges of deceptive billing practices related to their recent price increase for the service. Under the agreement, Texans who were subscribers between **September 6, 1990** and **December 7, 1990,** who wish to cancel their service may obtain refunds of up to four months service fees. Additionally, Prodigy agreed to pay the office of the Attorney General **$12,500** to cover investigation and negotiation costs. Apparently, the agreement covers only Texas subscribers and Prodigy is not inclined to offer the refunds nationwide.

The settlement revolves around some recent price increases raising the monthly membership from **$9.95** to **$12.95** and introducing a **$0.25** per message e-mail surcharge for all messages over a monthly allowance of **30** messages. Apparently, Prodigy was still selling sign up kits at **$49.95** that promised unlimited flat rate usage at **$9.95** and had in fact sent a direct mail piece to some **700,000** Texans in September - during the time it was publicly announcing abandonment of flat-rate and the inauguration of per message charges.

One ploy Prodigy has used to play down the bruhaha among subscribers over the rate change is to continually claim that all the noise is made by a tiny minority and that the vast majority of subscribers were not averse to the move. Three Prodigy subscribers decided to find out if that was true. Chuck Kolter, Walter Harvey, and Robin Bush actually surveyed nearly 10% of the subscriber base, compiling over 60,000 responses. Over half the respondents (51%) claimed that the 25 cent e-mail charge would in fact have an effect on them and 21% stated that the new e-mail surcharges will cause them to leave the service entirely.

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Boardwatch Magazine 12/89

coconut computing, inc

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Further, these were not generally discontented respondents, 63% felt that aside from the new fees, Prodigy management was responsive to their needs and 64% claimed to make purchases from Prodigy's online advertisers. The group met with a Prodigy service representative for four hours on December 12th to review the findings. The Prodigy representative made it clear the e-mail surcharges would go into effect January 1 regardless of member feelings on the subject.

The other online services are apparently VERY sympathetic to the plight of Prodigy. Mark Hiatt, sysop of the GEnie User round table on General Electric's GEnie Information Service, claims the number of Prodigy defectors coming on board GEnie's new STAR*SERVICES $4.95 monthly flat rate program is phenomenal. Indeed, we've been finding the Denver GEnie ports tied up with SERVICE INTERRUPTED messages repeatedly and intermittently on weekends . A few minutes later it clears with service normal and retries again produce the error message. We can only surmise they're experiencing call volumes in excess of their normal capacity.

HANDHELD CELLULAR

Oki Telecom offers a fairly attractive handheld cellular telephone. The **Oki 900** is a **12.7** ounce pocket cellular that is barely **6.5**-inches long and a half-inch thick. The standard battery allows **70** minutes of action and twelve hours on standby.

These pocket phones were first introduced with the **Motorola Mitac** phone last year at about **$3500**. We understand the Mitac is now going for about **$800** and the **Oki 900** carries a list price of **$899**. Like most pocket cellulars, an optional battery pack extends talk times, standby time, and weight. Oki Telecom, 437 Old Peachtree Rd, Suwanee, GA 30174; **800-554-3112**

CIGARETTE LIGHTER AC POWER FOR LAPTOPS

The obvious advantage of laptop computers is portability. With the new notebook computers, computer use on planes, trains, and automobiles, - and perhaps the occasional day sailer - is becoming more common. With laptops using DC battery power, and with most conveyences offering **12VDC** in relatively copious quantities, it can be frustrating to watch the laptop battery drain away into oblivion with no way to recharge.

Zirco offers an AC adapter they call **PowerTrip** that plugs into a **12VDC** cigarette lighter source and provides 100 watt AC power - usually more than enough to recharge laptop batteries. The **12VDC**-to-**120VAC**-back-to-lapt op-DC conversion may be inelegant, but it is effective. Zirco is quite proud of the device at **$199.95**. Zirco, 10900 W.44th Ave., Wheat Ridge, CO 80033; **303-421-2013** voice; **303-423-8346** fax.

GPO STYLE GUIDE ON DISK

If you sell software or hardware products to the government, there are usually one or more of several thousand specifications the documentation must comply with. And virtually all those specifications refer to the *U.S. Government Printing Office Style Manual.* The GPO Style Guide is a relatively ancient document so ubiquitous that many company's, particularly those who do deal with the government, have adopted it over the years as their own internal guide to writing as well. It provides guidelines for hyphenation, abbreviations, punctuation, and in general how to deal with some of the little questions that come up on how to present information in written form. Government requirements aside, over the years it has grown to very comprehensively represent common conventions used when writing.

Sageline recently announced version 2.0 of **GPOStyle**, a software product providing a ready TSR popup reference containing the GPO Style Guide in data form. A very quick hypertext data engine provides quick and easy access to some **2000** subjects including spelling, punctuation, capitalization, grammar, and type preparation. This is NOT a grammar checker of the **Grammatik** or **RightWriter** genre. It's a pop up reference to one of the most respected style guides in use. The program uses EMS memory to reduce DOS memory requirements to as little as **17KB** and it not only works well with all character based word processors, but even pops up over programs that are graphic in nature - Microsoft Windows et al. **GPOStyle** compresses the **400+** pages of the actual printed book into a **743KB** data file. The product makes the trip from them to you for **$129**. Sageline, P.O. Box 2346, Kingston, NY 12401; **800-345-5571** voice; **914-339-2140** fax.

$69 POCKET MODEM DOES 2400 BPS

Mail order catalogs used to be useful, but a bit dreary items of print jamming the mailbox. These days not so much so. Things around Boardwatch pretty much come to a halt when Drew Kaplan's **DAK** catalog arrives. Likewise Sharper Image, LL Bean, etc. Some of these catalogs are more excellent reading than many of the magazines making the rounds.

Damark gained fame selling carloads of manufacturer and distributor's overstocks at distressed prices. We really considered them a bit low-end in the past but things are picking up nicely in their product line. They have some very attractive feather beds, pillows, comforters, and futons these days. Like many of the gadget catalogs, they're dabbling in personal computers as well. Most of these vendors are carrying brands that have not made a big splash in the PC world, Packard Bell, Goldstar, etc. The draw is price, convenience, and pretty much a no questions asked return policy.

The Damark January 91 catalog offers a couple of items we found interesting. Most intriguing is an ad for 1200 bps and 2400 bps pocket modems. We don't know who actually makes them - they've been rebranded as **TT SYSTEMS**. This is a common technique for a manufacturer to unload a carload of product at distress prices and still not depress prices for the same thing under their own brand name. These are little cigarette pack sized modems that plug directly into your serial port connector, usually without a cable at all. A modular telephone line plugs into the other end. Laptop people love them because they are very portable, work well generally, and cost about **1/4** the price of special modems designed just for their laptop's proprietary circuit card slot.

The Damark models seem to qualify. They're both line powered, meaning they get what little bit of power they need from the telephone line rather than from a nine-volt battery, the laptop battery, or an AC source. The **1200 bps** unit, too slow for our tastes, is nonetheless attractive at **$29.99**. This is simply the lowest price we've seen for any workable modem for an IBM compatible. The **2400 bps** unit would actually be a much better choice at a still very attractive **$69.99** plus **$6** shipping and handling.

The units respond to the Hayes AT command set, they are of course autodial and autobaud. The connectors are **RS-232 DBF-25**. Since most laptops now are coming out with little 9-pin AT style serial ports, you may need a port adapter which complicates things mildly. But this is the cheapest we've seen on a 2400 bps pocket model and we do like the telephone line power feature that frees you from the battery schtick. Damark International, Inc., 7101 Winnetka Ave. N. Minneapolis, MN 55428; **800-729-9000**.

WIRELESS TELEPHONE EXTENSION JACK

Damark is also offering something we just have to order and play around with. It's called the **Phonex Wireless Phonejak**. This **$99.99** device consists of two boxes you plug into standard AC power wall receptacles. They have standard **RJ-11** modular telephone jacks on them. Not too exciting? Well you plug one of them into an AC outlet and connect it to a nearby telephone wall jack. The second one is connected to another AC outlet anywhere in the house. It too has an **RJ-11** modular jack. But you plug a telephone, modem, or fax into the jack on the second device. The two devices communicate data over your AC house wiring by impressing an RF carrier on the AC power sine wave. As a result, you can add a telephone jack to any AC outlet without running any additional wiring at all. We've got to admit we would be hesitant to plug the telephone line of a **$1200** modem into this thing and run a BBS on it, but to put an extension phone in an upstairs bedroom without figuring out how

to run wiring, this may be an easy out. Damark International, Inc., 7101 Winnetka Ave. N. Minneapolis, MN 55428; **800-729-9000**.

COMPUSERVE CHOOSES U.S. ROBOTICS FOR 9600 ACCESS - DROPS CONNECT CHARGES IN MALL

CompuServe, under heavy pricing pressure from Prodigy and GEnie's new Star service, eliminated connect time charges to its electronic shopping mall area. Callers entering the mall will no longer be charged **$12.50** hourly for the privilege of shopping there. The mall has actually been a reasonably successful venture with over a hundred merchants now available including Sears and JC Penney. Numerous specialty shops are also offering products electronically through CompuServe.

IBM and Sears had online shopping and some online services at a flat monthly rate through their Prodigy online service which has proven a popular pricing concept. GEnie recently placed most of their news, all shopping, many of their conference areas and e-mail under an even more attractive **$4.95** per month no connect charge plan they call **Star**. CompuServe's move to eliminate connect charge for mall shoppers is considerably more conservative but still a welcome move toward flat-rate. They've also rather quietly introduced several "packages" on their CB chat service that in some cases can bring chat time down to little more than a buck an hour for savvy users. CompuServe now claims **740,000** subscribers.

CompuServe also recently announced **9600 bps** dial-up access in ten cities with an additional 24 cities scheduled to come on board by March 1. The service incurs a **$10** hourly surcharge bringing connect rates to **$22.50** in Atlanta, Chicago, Columbus, Dallas, Fairfax, New York, Newport Beach, Santa Clara, Troy, and Tucson. From other areas, a toll free **800-331-7166** number allows **CCITT V.32 9600 bps** connections for an additional **$9** hourly (total **$31.50** per hour).

CompuServe purchased an initial order of **500 U.S. Robotics Courier HST Dual Standard** modems to implement the first ten cities. The modems support **V.32/V.42bis** error correction and data compression. CompuServe Information Service, 5000 Arlington Centre Boulevard, PO Box 20212, Columbus, OH 43220; **614-457-8600**.

NATIONAL ONLINE TELEPHONE DIRECTORY

by Jack Rickard

Alexander Graham Bell did invent the telephone. But his vision of the invention revolved around transmitting concerts and performances between cities. Initially customers were businesses but it wasn't long before having a telephone in your home was the new status symbol and the web of wire began to spin across the nation.

The development of the telephone technology, as technical innovations so often do, soon led to some other problems. Connecting your telephone to the specific set owned by the person you wanted to call was immediately troublesome. For several years, you just rang the operator and told her who you wanted to talk to. They manually connected your line to the correct one by plugging a patch cable into a switchboard.

As the subscriber base grew, this caused some problems in training operators. Assigned numbers followed and again as the number of users grew, this too became cumbersome - they soon ran out of numbers. Exchanges were introduced. I still recall **EDgewater 5-7765** as my home telephone number and my Grandparents were at **COrning 4-2286**. The development of these exchanges accounts for the alphabetical characters on our telephone dials even today, although the system was dropped for 7-digit numbers in most areas in 1963. Today, even the seven digit numbers are running out. Area codes always have a **1** or **0** as the middle digit and prefixes (the first three digits after the area code) can never have **0** or **1** as the middle digit. There is talk of eliminating this restriction to allow creation of more area codes and prefixes and thereby more available telephone numbers. According to AT&T, there are slightly over **100 million** telephone installations in the United States.

As the number of lines grew, the telephone company began publishing telephone numbers in printed directories. Today, telephone directories are typically half a foot thick for major metropolitan areas but virtually everyone with a phone who doesn't specifically request to be omitted is listed in a telephone directory somewhere. Since modern directories are all maintained in electronic databases and actually have to be converted from there to printed form, and since the telephone company is, after all, the telephone company, we've had a little difficulty figuring out why we couldn't dial up somewhere with a modem and look up a telephone number electronically.

With the breakup of the Bell system in 1984, a number of restrictions were placed on local telephone company activities by the Modified Final Judgment agreed to by AT&T as the price of admission to unregulated markets such as computer equipment. One of those restrictions involved development of "information content" products. While Judge Green has made it clear that white pages information is not precluded there, the telephone companies don't see much future in just providing white pages directory assistance online. The tariff allowing them to "recover costs" in providing directory assistance for a fee has turned into a major profit center they are disinclined to tamper with. But

their real ambitions lie in the much more lucrative yellow pages advertising in an online world. They've essentially held white pages directories hostage in an attempt to force the Justice Department into allowing them to publish yellow pages online.

Further, they have adopted a real dog-in-the-manger stance with regards to releasing the information to others. Typically, they require an exorbitant charge of as much as **30 cents** per name to other parties (specifically targeted mailing lists average five to eight cents). Recently, they have begun experimenting with online DA to large businesses at phenomenal rates - several thousand dollars to "sign up", hundreds of dollars per month, AND connect time.

Within the past year, there have been a couple of breaks for the individual with a modem. AT&T put their **800 Business Directory** online on CompuServe. And it has been successful enough that CompuServe has followed up on the concept. They recently added a service from a company named **MetroNet** to list consumer names, addresses, telephone numbers, and length of residence to service titled **Phone*File**.

To access Phone*File, enter **GO PHONEFILE** at any prompt. The service requires a **$15** per hour surcharge in addition to CompuServe connect rates. The database lists **80 million** people across the United States and operates at a very impressive search speed. You can provide a surname and either city and state or state alone, and it will **immediately** begin churning out a list of everyone with that surname in the area. Alternately, you can enter a name and an address and get the telephone number and length of residence.

The service is compiled from a variety of sources, including white pages directories, real estate transactions, and public information obtained by state agencies for such purposes as driver licenses, births, deaths, etc. It is not actually too terribly current. We checked a brother who moved to Houston over a year ago and he's still listed in a St. Louis suburb with no listing for Houston. On the other hand, the length of residence data, which is simply how long you've been at that address in **THEIR** database, was essentially correct in our own case. And telephone numbers are omitted in a number of cases, presumably because they had an unlisted or unpublished telephone number.

The service is just made for locating the long lost. Searches for lost relatives, old flames, and simply people you've lost track of over the years could be quite valuable - and interesting. While it did not appear to be religiously maintained up to the minute, it does appear to be useful. And it does go beyond the name, street address, and telephone number available in white pages directories to include city, state, and zip code.

There is of course, a knee-jerk reaction to invasions of privacy. We're most thoroughly unsympathetic to these views. The recent controversy over the new **CLASS** telephone services, specifically **Caller ID** tantalizes the sense of the absurd. That someone should have a right to "privacy" (read anonymity) when calling us on the telephone is just preposterous under ANY and ALL conditions imaginable. To stem the protests of the feeble minded, most areas are now offering call blocking - a feature that allows the caller to remain anonymous. Once caller ID becomes more or less ubiquitous, we intend to rig the telephone to ring only if a caller ID is received. The only way an anonymous caller will reach us is if we happen to pick up the silent phone while they are involved in heavy breathing.

There is nothing in **PHONE*FILE** that has anything remotely to do with credit, employment, buying habits, or any detailed data whatever - name, address, zip, telephone, and length of residence. This information is quite publicly available and in fact has been readily and conveniently available to government agencies and large corporations for years. They use it every day. For some reason, as long as it is government and large companies, most people feel reasonably comfortable with the availability of this information, although many simply aren't aware HOW available it has been. But when Microsoft or Lotus releases a CD-ROM with the same data on it, a fire storm of controversy erupts. Lotus has in fact delayed introduction of their CD-ROM database of 120 million residences. It did provide estimated income and some other data that probably is of dubious value and does hold a propensity for harm.

But finally, basic address/telephone information is available to anyone with a modem. We ARE admittedly a little paranoid about governments and large economic entities. We KNOW they have absolutely no moral compunction about working us over if the ticker indicates a twelve-cent advantage to them in doing so. That individuals should have access to the same tools is actually a very democratic concept. CompuServe Information Service, 5000 Arlington Centre Boulevard, PO Box 20212, Columbus, OH 43220; **614-457-8600**.

WHICH BBS PACKAGE IS RIGHT FOR YOU?

by Jack Rickard

The interest in BBS software is growing daily. One problem anyone considering a BBS for fun, for their business, or as a business faces is selecting appropriate BBS software and learning about the sometimes complex hardware configurations required to support them. There are no ready reference books on the subject. Existing system operators are without doubt the WORST place to seek advice. Virtually all operators view the software they currently run as absolutely the best available and all other packages utter garbage.

Many have only run one or two packages and have little in the way of comparative information. And finally virtually no independent press adequately deals with the subject knowledgeably.

For one thing, it is still a bit of a niche market. Secondly, it is a genuinely complex issue. The large circulation personal computer periodicals are a bit afraid of dealing with BBS software and with good reason. A limited, albeit growing percentage of their readership is interested in the subject, and it is horrendously difficult to deal with knowledgeably. The issues quickly become quite technical. And the BBS software packages are often developed using completely different philosophical visions of what a BBS is or should be. Cute little boxes lining up feature comparisons do NOT work at all and if you see them in print know that you're for the most part having smoke blown up your skirt. Some packages are strong on chat functions, others don't even have them, and yet others have them but call them and use them for something completely different. Comparison's are very difficult and almost always unfair in some way or another.

Boardwatch attempts to cover developments - new products, new releases of existing ones, and feature enhancements - as they happen for the leading packages. We do point out interesting systems run by those who USE particular packages and how they use them and over time, you can get a feel in this way for which packages work best for which type of applications. But a side-by-side detailed review of BBS software would run about 30 pages and require an incredible devotion of resources and time for us to prepare and for you to read.

Shorter pieces also pose problems. We can say, for example, that we like Galacticomm's MAJOR BBS for social chat service work; Wildcat or PCBoard for shareware library applications, game doors, and LAN applications; and TBBS for information presentation and online database applications. As soon as we do, everyone running MAJOR as a file library and TBBS as a social chat line service is going to take outraged exception to this statement. Yes, we can back up those views with years of experience examining thousands of systems and we could detail why - but now we're back to 30 or 40 pages of gruesomely technical detail. TBBS DOES have games and chat and it IS possible to present text information and even, conceivably, a database on a PCBoard system using the right combination of door programs, but it's a bit like driving a nail with a chain saw.

And while we try to handle software selection inquiries as helpfully as possible, time is a bit of a problem. As the industry matures, there may be solutions in the form of people who act essentially as BBS dealers or consultants. The problem is locating dealers who actually take the customers part in the transaction - rather than shilling for a particular vendor. Informally, we know a couple of people who do this sort of thing in a relatively trustworthy fashion. They do of course sell the software and apparatus involved, but the better ones sell different types of packages appropriate to different needs.

The big issue is of course multi-line BBS operation. Unix was an early favorite because the basic operating system is inherently designed to handle multiple users. Installing Unix is generally considered more of a career move than a software installation task. The environment is quite difficult to install and from our point of view, difficult for both the user and sysop to use. But Unix adherents tend to shower the Unix environment with the kind of love and devotion normally reserved for religious sects and nationalistic causes. To know Unix in detail is apparently to love it. It's just that very few ever come to know it.

There are a number of Unix BBS packages including **AKCS**, **XBBS**, **Teamate**, **Picospan**, **CAUCUS**, and **Coconet**. Generally, if pinched for information on this subject by someone hell bent for Unix, we defer to **Dave Hughes** of **Old Colorado City Communications** down in Colorado Springs. If Dave can't find an answer to your question about Unix BBS applications, he'll at least chew your ear with such a grand vision of the future of the online world that for a couple of hours you'll be floating in a kind of euphoric rosy cloud of what might be, and you'll likely forget whatever mundane "how to" question you may have had earlier. Seriously, he either knows or knows who knows and his Old Colorado City Communications sells at least four of the available BBS packages and actually has them all online for you to play with. Dave Hughes, Old Colorado City Communications, 6 North 24th Street, Colorado Springs, CO 80904; **719-636-2040** voice or **719-632-4111** data.

In the DOS BBS world, things are not quite as easy. For one thing, the level of professionalism among BBS software vendors is a bit discouraging. Some really excellent BBS software is marketed by some very confused people frankly. The long established software distribution concepts of dealer networks, multiple sales channels, and VAR support is all a bit of a mystery to some of these people and they tend to either have no dealer program or a very confused one. Anything beyond answering the telephone and taking a credit card number can be a bit overwhelming for them.

We recently spoke with a fascinating individual who is trying to market a broad offering of BBS software. Recognizing that no BBS software package is appropriate for all applications, **Jay McGuire** of **Telesaurus** saw a need for an independent dealer who could help people design a system to their needs using off the shelf BBS packages and hardware components. He's put together a line of products including most of the major, and many of the minor BBS software packages, serial breakout cards, modems, and paraphernalia needed to construct a wide array of systems and offered them by mail order. He interviews customers to

find out what they want to do, what some of the decision point criteria are for their application, and then puts together a proposal listing the hardware and software to best address the problem. He doesn't actually install the system in most instances, but he can steer people toward the best package and offers some attractive discounts from the list price of most items.

According to Jay, there are two problems he faces on a daily basis. Many of the calls he receives are from people who can't believe he's selling BBS software independently. The concept of a multi-product dealer is a bit foreign to them at this stage of industry development. Is he selling pirated software? Do the vendors know he's doing this? In all cases, he has working dealership agreements with the vendors whose product he sells.

The second problem relates to the first. The BBS vendors tend to be a bit confused. He called one vendor to inquire about a dealer program and was told they didn't really have one but if he bought ten copies he could get a **40%** discount. Although McGuire is currently moving about thirty installations per month, ten of any one product is still a big swag in this infant industry. Worse, he did arrange with one of the company VPs to carry the product, and was then contacted by the company president who thought he meant he was dealing exclusively in THEIR BBS package. He was enraged to learn Jay was offering competitors products as well. Too many of the vendors have never quite risen above the kindergarten tactic of competitor bashing long enough to learn to market their own software.

Another BBS vendor did provide McGuire a discount on their package. McGuire passed part of the discount on to his customers and one of them contacted the vendor to make sure the sale was on the up and up and they would receive full support for the package. The vendor was furious that Telesaurus was "discounting" the price and effectively "competing" with them on their own software. They contacted McGuire and within a few minutes McGuire realized he was not dealing with an experienced business person. "We just dropped the dealer arrangement" he said. "We can't offer a course on the subject and it's just not worth the education process."

According to Phil Becker of eSoft Inc., developer of The Bread Board System BBS package, an effective dealer program is an important part of any software marketing program. "Sure, we lose a few sales to our own dealers. But they more often bring us sales we just wouldn't have had otherwise. It's part of the business of selling software."

McGuire has put together an impressive and varied line of packages including Becker's **TBBS**, **Oracomm**, Galacticomm's **The Major BBS**, **Searchlight**, **DLX**, and Mustang Software's **WILDCAT!**. Additionally, he handles some Unix packages including **XChange** and Brian Dear's very graphical **Coconet**. He also handles the multi-port serial cards for Digiboard.

The most exciting thing McGuire has in development right now is a Dan Bricklin Demo slide show of all the BBS applications he carries in action. The demo program, available for **$10**, provides a menu with a list of BBS software packages. You select a title and view a grand tour of an actual installation using the package from both the user and sysop point of view. Telesaurus, 21064 Green Hill Road, Farmington Hills, MI 48335; **800-488-9831** or **313-477-0067**

Selecting BBS software IS a difficult and time consuming process. Worse, you wind up living with the decision for some time to come. We'll do what we can within the pages of Boardwatch to keep you abreast of developments in the field. And for hobbyists, researching and selecting the software can be half the fun. But particularly for business users who just want to get their application up and running successfully, we do see an increasing role for independent consultant/dealers to help guide potential operators through the vagaries of the various packages available.

DEVICE LINKS LANs/PCs VIA ISDN

Combinet has introduced an adapter for Integrated Services Digital Network (**ISDN**) telephone service allowing Ethernet and Token Ring LANs to link by telephone using the two 64 Kbps lines provided as part of ISDN Basic Rate Service.

ISDN is typically priced only slightly higher than regular business telephone service and provides two **64 Kbps** channels plus a **16 Kbps** data channel. While not popular yet, local telephone companies around the country are rolling out ISDN offerings ***Real Soon Now*** - most recently, Pacific Bell.

The **Interchange ISDN LAN Adapter** can be used to link two Ethernet or Token Ring LAN's located in different buildings or conceivably, in different cities. The connection is transparent to the LAN protocols. Further, the device can be used by ordinary PC equipment through the **RS-232** serial port at speeds up to **19,200 bps** using any existing communications software. Interchange ISDN LAN adapter is priced at **$1395**, comparable to a top of the line high speed modem. Ethernet and Token Ring interfaces are an additional **$495**. Combinet, 111 Andre Court, Los Gatos, CA 95032; **408-358-4826**.

A 2400 BPS MODEM FOR $59.95 - HOW LOW CAN YOU GO

All modem's are not created equal. As more vendors bring V.32/V.42bis modems to market that won't connect to anything on planet, this will become more obvious. BBS system operators who've been through the wars generally settle on U.S. Robotics, Multitech, or Hayes models once the fascination of staying up till the wee hours of the morning tinkering with oddball bargain brands has worn off.

But realistically, not everyone wants to operate a BBS, and for many callers modems are a commodity item. If you have a **$550 XT** with a 20 MB hard drive you picked up at Buyers Club and would like to put a toe in the online waters, nothing we can say will likely persuade you to kick in another **$1295** for a modem. And many people would love to go online - if the price were right. So we begin our search for the cheapest 2400 bps modem on earth.

This month's entry is from a retailer that is making some impressive strides in showing the country how to market computer equipment. **Soft Warehouse** has but sixteen outlets nationally but everyone we know is talking about this chain. Bins of serial cables at **$4.99** each, paper, labels, fax machines, laptops, upgrade chips, scanners, monitors, keyboards, hard disks, - a walk-in treasure trove for techno-geeks. A kind of Sam's Wholesale Warehouse store for computer people. We picked up a keyboard last week for **$29.00** and a 640X480 VGA monitor for **$249**, along with an assortment of cables from the bins.

Soft Warehouse currently offers both internal and external modem models under their **COMPUDYNE** house brand. The external model is **$69.95** and the internal circuit card version is a very attractive **$59.95**.

The external model is so cheaply made it's actually cute. The box is less than four-inches square and two inches tall and weighs less than a box of kitchen matches. Its perfectly square corners and edges indicate that neither Cardin nor Loren were called in as ergo-design consultants. But it does have a tiny power button on the back panel along with an **RS-232** connector and two **RJ-11** modular telephone jacks, one for the line and the other for a telephone of course. It does respond to the Hayes AT command set and it does operate at 2400, 1200, and 300 bps using essentially correct modulation standards. There is no error correction or compression, no fax capability, but for a bald-faced 2400 bps connection, we've found nothing cheaper. The warranty indicates that if you break it, not only are both pieces yours, but you're not out much either. For those interested in trying the online world, the COMPUDYNE provides a reasonably inexpensive introduction. Soft Warehouse actually had a 1200bps model for **$49.95** but the days of 1200 bps, even for a starter modem, are pretty much past. We are interested in any reader input regarding even less expensive 2400 bps modems. There has to be a **$29** 2400 bps model out there somewhere. Soft Warehouse, 15160 Marsh Lane, Dallas, TX 75234; **800-451-SOFT**

SHAREWARE FOR GRAPHICS DISPLAY

by Jack Rickard

With the advent of IBM's VGA graphics standard, IBM PC owners could finally face the rest of the personal computer world on the subject of graphics. Graphics are measured primarily by resolution, and available colors. The resolution refers to the number of individual picture elements or dots, known as pixels. The more and smaller pixels you can produce on a screen, the finer the resolution and so the more recognizable the picture. VGA graphics brought **640** pixels wide by **480** pixel tall color graphics to the IBM screen.

Perhaps more important to picture quality is color. AT&T has marketed a fascinating graphics board termed the **TARGA** with but **512** pixel resolution, but it can display thousands of colors simultaneously. The standard TV screen only contains **512** scan lines and thus vertical pixels. But it can display an almost infinite variety of color combinations. With the right color abilities, resolution becomes less important.

Once IBM released their **VGA** offering, everyone from here to Taiwan began trying to duplicate it. To differentiate their products, many chip makers and board makers began offering resolution and color combinations even higher than VGA, and the current top grade in the affordable price range is **1024X768** with **256** simultaneous colors - falling under the roughly defined rubrick of **Super-VGA**. And the price for this higher resolution equipment is falling. We recently picked up an **STB Systems PowerGraph VGA** board for **$169**. Like most popular VGA boards, the STB came with **256KB** of video **RAM** memory. To actually use the **1024X768** mode with **256** colors required the addition of another six 4-bit by **256KB 80ns RAM** chips to bring it up to **1 MB** of on board video RAM. The chips cost a little under **$8.00** each. The board is based on a **TSENG 4000** chip set. This is one of the latest and most advanced chip sets commonly used in VGA cards and seems to work well and quite quickly. STB Systems Inc., PO Box 850957, Richardson, TX 75085; **214-234-8750**.

With the price of high resolution VGA cards falling, graphics has become more popular among bulletin board systems. Several years ago, CompuServe developed a graphics file format titled **Graphics Interchange Format (GIF)** to exchange bit-mapped color graphics images. While the world of graphic file formats is still pretty much in chaotic disarray, among bulletin boards the **GIF** file format has caught on to the point of being THE standard for graphics exchange. **GIF** files are denoted by the **.GIF** file name extension. It supports a wide array of resolutions under the same file structure and many BBS have begun offering enormous selections of **.GIF** files.

Most **GIF** files are a bit blue. Well actually, the main draw seems to be pornography and some of it is alarmingly....well....graphic. A number of system operators across the country have learned the techniques for scanning color photographs into **GIF** file formats. Since many of the really obscene pornographic magazines are understandably a bit reluctant to actually register their copyright, BBS operators scan these in with reckless abandon. But some of it is actually quite artistic and the format has been adopted for many files containing stunning space photos, automobiles, nature scenes, etc. With the higher resolutions and more color, these files have become eye candy of a most intriguing sort.

Naturally, along with the spread of **GIF** files have come utilities for easily viewing them on screen. Perhaps the most popular and capable of these is a shareware program titled **VPIC** by Bob Montgomery of Altamonta Springs Florida. Currently in version 3.4, **VPIC** travels in the file **VPIC34.ZIP** on many BBS around the nation.

While we like the STB PowerGraph card, as well as our earlier Orchid ProDesigner, to take advantage of the higher resolution modes beyond the basic VGA requires some specialized programming. **VPIC** comes with a wide assortment of configuration files for various VGA cards and in fact, the STB card we bought came with a copy of **VPIC** and the driver for the **TSENG 4000** chip set the STB uses. With **VPIC**, this configuration file, and the board, we can view **.GIF** files in **1024X768** by **256** colors and the resulting display on our **NEC MultiSync 3D** monitor is stunning photographic quality.

VPIC allows you to select a **.GIF** file from a screen directory display and call it up on screen in any of several selectable resolutions. At many of the higher resolutions, these graphics really are photographic quality and if you're accustomed to seeing primarily alphanumeric characters on your screen, you will likely be shocked at what your display can do.

Once you have the program configured, it is actually quite easy to use. It displays a directory of files from your hard disk and you can cursor to the desired file, press **ENTER**, and it paints it on the screen - quickly for lower resolutions and somewhat more slowly for the larger high-res files. Function keys allow you to switch between video graphics modes.

VPIC also has the ability to create rotated, inverted, and mirror images of a **.GIF** file and save that image to a new file. Further, it addresses the almost endless series of OTHER graphic formats. You can load a **.GIF** file and subsequently save it in **.PCX** format, a popular file format established by ZSoft's PC Paintbrush drawing program, **.MAC** format for Macintosh, PC Paint's **.PIC** file format,

AT&T's .TGA files for the Targa board, Dr. Halos's .CUT format, and several others. As such, VPIC acts as one of the more impressive graphics file format conversion utilities.

The program is constantly updated to reflect the ongoing development toward ever higher resolution graphic cards. It's considered one of the most capable file viewers available. The shareware registration is a very reasonable $15. Bob Montgomery, 543 Via Fontana #203, Altamonta Springs, FL 32714; CompuServe 73357,3140.

CompuServe recently made a bit of a splash with their CompuServe Information Manager (CIM). CIM was a graphic interface program for CompuServe and it does make the service easier and more fun to use. One of its features is a .GIF viewer. You can select a .GIF file from a library and download it to the screen. The only problem is, that if you liked it, you had to download it AGAIN to get a copy on your disk.

Bill Parquet of Perrysburg Ohio has done the same thing for the rest of the world with a program titled SHOWGIF. In fact, SHOWGIF is better in that it makes a disk copy as well as downloading to the screen. Further, SHOWGIF works with any terminal program and any online service.

While VPIC is a program to display .GIF files after you have downloaded them, SHOWGIF is a shareware program to display .GIF files WHILE you download them. It lacks conversion utilities and many of the niceties of VPIC and isn't really a competing product. It serves a different function altogether. This program essentially extends any terminal package to add a graphics viewing facility. And how it does it is actually admirably cunning. SHOWGIF is a 30KB TSR program that monitors the DOS services to detect any file written to disk with a .GIF file name extension. When it detects one, it decodes the graphics data and displays it on screen on the fly.

If you simply load SHOWGIF and then copy a .GIF file from one directory to another, it will display it on-screen.

But SHOWGIF really shines in an online environment. Any time you DOWNLOAD a .GIF file, using any terminal program and almost any file transfer protocol, the file is of course written to your disk. As a result, once you have loaded SHOWGIF as a TSR, loaded a terminal program and dialed a BBS, if you choose to download a .GIF file, it will automatically be displayed on screen WHILE you download it.

SHOWGIF now works with ANY file transfer protocol. In previous versions it had difficulty with SEAlink protocol because SEAlink downloads files to a temporary file and then renames the file to the appropriate file name. The temporary file does not use the .GIF name extension and so SHOWGIF doesn't display it.

In the current version 5.1, SHOWGIF features an alternate .GIF detection method they call "streaming". Rather than look for the .GIF file extension, the program monitors the data stream of all drive transfers and begins displaying if it detects a GIF87a in the data stream. This identifier is contained in every .GIF file.

Another upgrade in the current version is the addition of a couple of controls. By adding a /P:+ switch to the command to load SHOWGIF, the program will pause after a download and retain the image on screen. If you press any key, the image is cleared and you're back to normal BBS operation. Another proper feature addition in this version is a screen blanking kill switch. According to the author, if your spouse or spousette happens into the room while your ogling the latest Swedish contortionist threesome on screen, simply press the TAB key and the screen blanks most thoroughly and immediately. The download continues normally and you can resume your prurient debauchery at a more discreet time.

We had a little problem with version 4.1b of SHOWGIF. The program purports to use the same configuration files as VPIC. But while it worked superbly on our Orchid ProDesign card with the TSENG 3000 chipset, it failed to recognize the bank switching technique used by the TSENG 4000 chip set in our STB PowerGraph model - even using the VPIC configuration file for the TSENG 4000.

Unfortunately the author eliminated our problem pretty effectively. The new version 5.1 doesn't support ANY SuperVGA modes at all - limiting the product to 640 X 480 and sixteen colors. All SuperVGA support requires a $30 registration. In version 4.1 the author professed a very negative attitude toward shareware by stating that he didn't expect to make anything but if you did want to make a contribution, he would except it. In 5.1, he demands $30 ransom to activate the higher resolutions. Despite this clear case of crippling, he now includes an ASP logo in his documentation and claims to be a member of the Association of Shareware Professionals. It was our impression that you could not include the ASP logo on crippleware.

The crippling of this most excellent program is unfortunate beyond the normal reasons crippling is a poor idea for aspiring shareware authors. VGA cards in resolutions above standard VGA are an absolute chaos of features with little in the way of standardization. For most graphic programs, a separate .CFG configuration file is required for each model VGA card. As a result, we have no idea whatsoever if SHOWGIF now does or does not support our new TSENG 4000 chip even in the registered version and no way of finding out short of registering one. The telephone number listed in the documentation as his product support BBS simply doesn't answer, there is no voice number, and our messages on another BBS listed in the documentation went unanswered. We could easily pay the $30 and

STILL not be able to use the program in our **1024X768** with **256** color mode.

SHOWGIF is a cunning idea that adds an entirely new functionality to online .GIF viewing and downloads. You can now view .GIF's online from ANY communications program, and each one you view is also copied to your disk drive for future posterity. It should be a raging success in the online world. But the crippling of this fine program is truly a tragedy, and the author provides NO support or even valid contact information whatsoever. We would love to see someone take this beautifully elegant idea and develop it professionally as a shareware product. As it is, we're not only disappointed in the author, but also a bit miffed at ASP for allowing the use of its logo on this deceptive and fully crippled software. Currently in version 5.1 as **SHOWGIF51.ZIP**. Bill Parquet, 30231 Bates Road, Perrysburg, OH 43551.

LONG DISTANCE USA

AQUILA BBS - PROMISING NEW PCBOARD SYSTEM IN CHICAGO

by Jack Rickard

They say lightning never strikes twice. But our cover girls for this month HAVE been hit twice - in June and again in July of 1990 - destroying most of their modems, hard drives, and network equipment - knocking out their system completely. Despite such heavenly discouragement, from the ashes they've built AQUILA BBS at **708-820-8344** into one of the most promising new entries in the world of national Mega-BBS systems. The system resides in a 150-year old stone house just outside of Chicago in Aurora Illinois. And after seeing it in operation, we hope their eerie lightning strike problems don't turn Aquila into the haunted house of the BBS world.

Kevin Behrens and Steve Williams are electricians working the Chicago area and friends for many years. They became interested in personal computers with the advent of the Commodore 64 and they both upgraded to IBM machines in the mid '80s at about the same time. They had played at running a BBS on the Commodore system and later on a single line XT hobby system. But a year ago this month, they got serious with a multiline PCBoard system and we can't recall seeing a system come so far, so fast, and in so excellent a manner.

General purpose BBS systems are hard to hang a story on. By definition they have little in the way of a specialized theme. We can go on for pages about hot air ballooning BBS, sailing BBS, scuba diving BBS, etc. But once you've seen one shareware library with message conferences, what else is there?

Excellence is a start. Quantity ranks as a big draw. Aquila BBS has plenty of both. For starters, unlike many systems that join a network, Aquila joins every network they can locate. They currently have about 450 message conferences on the system from FidoNet, Rime, Throb Net (an adult message network), Metrolink, and Interlink and they're actually looking for more. We jokingly mentioned they seemed to have everything but Usenet News Groups online and they instantly started querying us on what they were and how to get them. Like most popular PCBoard systems today, they run Mark Herring's QMAIL door to allow callers to dial in, fetch the conference messages they want, and read and respond to the messages offline - avoiding the long distance connect charges online reading engenders. Later, they dial back in and simply upload their responses. According to Behrens, most of their callers are very heavily involved in message conferencing and most of them do use offline mail readers.

We've done a number of articles mentioning online message conferencing. Along with file downloads, conferencing is proving to be the most popular online activity on BBS systems. The networks link hundreds and in some cases thousands of BBS systems across the country and around the world to "share" or "echo" message conferences. You may enter a message in a COOKING conference in Chicago for example, and receive responses to your question from systems in Texas, California, and Florida. All participants may be making local calls into local BBS, but the effect is a slow motion national network. This results in message areas often much more active cumulatively than similar conferences on the large commercial services such as CompuServe and GEnie.

But while we can mention a few teaser subjects like photography, sports, seniors, writers, scuba, job hunting, medical, genealogy, etc., space considerations pretty much preclude our mentioning enough to give you a feel for how many and how varied these conferences really are.

The Aquila team is dead serious about bringing their system to life and they are making many of the right moves to do it. You can register for the system using a credit card - a mandatory convenience serious operators must provide. Further, they mail their callers with some marvelously attractive and educational printed information on how to most effectively use the system. One of their brochures lists some 430 message conferences they carry online. With their permission, we have reprinted this list in this month's issue in place of our usual city BBS list. This will provide a good idea of just what we are talking about regarding message conferences.

The system sports over 3 Gigabytes of data storage. Even then, messages are only retained for twelve days and that seems a bit short to us.

For file hunters, Aquila claims over 50,000 files in 83 directories. We found the file areas impressively current and the file listings

quite descriptive. But the organization was what caught our eye on this system. Having 50,000 files in one place is great, but hardly unusual with as many megaboards as there are springing up around the country. But if they are difficult to search and access, they don't do the average caller much good.

Aquila has organized their file categories most impressively. For example, they have a file area for calculator programs. Would you believe there are 42 individual shareware programs available to do nothing but simulate pocket calculators - financial calculators, HP calculators, programmer calculators, scientific calculators, etc.? One has to question whether it is appropriate to run a software program to turn a $3000 piece of desktop iron into an $8 pocket calculator, but there are 42 shareware developers who have labored long into the night to create programs to do just that.

One area has nothing but clock programs that will put analog clocks, digital clocks, clocks with big numbers, clocks with little numbers, programs to synchronize your PC clock, etc. Seeing the spectrum of software available for such specialized functions provides a much different view of just how dynamic the shareware software development world is.

The system has an impressive array of disk utility programs. And with the popularity of Microsoft's Windows 3.0, Aquila has amassed a collection of over 490 different Windows applications. True, many are simply icons and wallpaper type utilities, but there were a few good solid applications. The Bart Simpson wallpaper for Windows is sure to be a winner. We would have thought Microsoft would have been out there with that one themselves.

The system also carries some online news, including USA Today Decisionlines each business day and our own Boardwatch Magazine online.

If the system has a specialty, it's Behrens fascination with things graphic. He's invested in a pretty high quality Sharp JX300 color scanner and a pickup truck load of very capable graphics manipulation software. At the drop of a hat he's off to scan, modify, filter, convert, and otherwise mangle real world images into high-resolution **.GIF** files for the system. He began scanning the Boardwatch Magazine covers and when he called for permission, we were so impressed we asked for a copy of our own. The system sports over **2,000 .GIF** files. Their **ADULT** conference has its own very large and impressively graphic directory of pornographic **.GIF** files showing an endless selection of men in women in an amazing variety of compromising, and indeed, indiscreet poses. But Behrens disclaims any real interest in the area himself. He's working on an antique car collection series right now. Scanning services is a bit of a sideline he offers callers.

Like an increasing number of PCBoard systems, Aquila has a labyrinthine subscription fee system that if not confusing for the callers, must at least be a major headache for the system operators. A $25 subscription allows 6-months access, an hour per day online, and 1 MB of downloads. A $40 subscription raises the daily time limit to 90 minutes/1MB and a $50 subscription increases that to 120 minutes and 2MB. Finally, a $60 fee provides 120 minutes and 3MB daily. We have to wonder how much damage callers could do with 90 minutes, no download limits and a $50 annual fee.

The group runs the system in common. Kevin Behrens does most of the graphics, Steve Williams handles the technical matters and LANtastic 10Mbps LAN that holds everything together. Kevin's wife Kris Behrens does the books and their most recent addition, Chris Babb manages the mail conferences and desktop publishing. With the number of new files they add each week, the **430** message conferences, and the graphics area, Aquila consumes an immense amount of their personal lives. But these people are more enthusiastic about running a BBS than any team we've come across yet. According to Behrens, the BBS involves some of the most satisfying work he's ever done. "Everything you do on a BBS is completed and judged almost immediately. The immediate approval or condemnation of the callers is a very stimulating and satisfying experience."

We found Aquila to be an excellent file download library, one of the largest message conferencing systems we've found anywhere, and a very interesting collection of graphic GIF files. This nine-node PCBoard system has been in serious operation for less than a year, and according to Behrens they've attracted about **250** paid subscribers and are paying their bills with a monthly income if a little better than **$1000**. From the superb organization, attention to detail, and emphasis on current features, we would be surprised if that modest success doesn't expand impressively over the next year. Aquila demonstrates as well as any system we've seen that the pace in BBS development is picking up dramatically. Our highest recommendation. Aquila BBS Inc., 4430 East New York St., Suite 201, Aurora, IL 60504; **708-898-5488** voice; **708-820-8344** data.

SNAFU BBS - ONLINE SERVICE FOR GOVERNMENT WHISTLEBLOWERS

by Jack Rickard

The current hot scandal in our defense procurement establishment is of course the **$50 billion** cost overruns for the **A12** attack plane. Three Admirals have lost their careers and the program was finally canceled - causing Mcdonnell Aircraft and General Dynamics to lay off over eight thousand brutally surprised workers and Mcdonnell may in fact wind up in receivership. Large scale government procurement programs are increasingly going wildly out of control.

E-Mail Conference Descriptions

Echo Legend : L = Local f = Files Available I = ILink R = RIME F = FidoNet * = Private

Aquila Conferences

#	Name	Echo	Description
0	MAIN BOARD	L-f-	Aquila Main Board - Help & Local Interests
1	89-CONF	L-f-	Aquila 1989 conference, last years programs
2	ADULT	L-f-*	Aquila Adult Conference - 21 or over
3	ADULT - GAY	L-f-*	Aquila Adult Gay Conference - 21 or over

General Discussion Topics

#	Name	Echo	Description
295	ARTHUR	R	Discussion centering around King Arthur
308	ASTROLOG	R	Discussion centering around astrology
476	ASTRONOM	F	Astronomy and space related issues
17	ASTRONMY	I	Current astronomical news and events
420	ASTRONMY	R	Stars, physical laws and announcements
18	ATHLETICS	I	Sports topics and discussion
477	AUDIO	F	Audio equipment, discussion on audio topics
20	AUDIO	I	Audio equipment, receivers, speakers, turntables
21	AUTORACE	I	All types of high performance cars and racing
268	AUTORACE	R	Discussion of racing cars and upcoming events
478	AVIATION	F	Aviation topics and related discussion
22	AVIATION	I	Aviation topics for pilots and flight enthusiasts
256	AVIATION	R	Discussion centered on flying and airplanes
284	BEERS	R	A light discussion on home brewing of beers
27	BEYOND	I	Paranormal and Metaphysical exploration of unknowns
414	BICYCLES	R	A conference geared to the bicycle enthusiast
333	BOATING	R	A conference dedicated to boaters
265	BROADCAST	R	Issues faced by those who work in TV and Radio
482	CABLETV	F	Cable TV topics and discussions
34	CARS	I	All about automobiles - repairing, restoring, collecting
483	CARWARS	F	----------
486	CD_ECHO	F	Topics covering all types of CD music
397	CELLULAR	R	Tech and user discussion of Cellular products
488	CHATTER	F	Mindless chatter about everything and anything
36	CHESS	I	Chess enthusiasts, play by mail, and strategy
352	CHESS	R	For all those who love chess
37	CHITCHAT	I	Casual talk between users, ILink party line
39	COLLECTR	I	Collectors discussion
40	COMEDY	I	Jokes and humorous conversations
302	COMICS	R	Comic books, comic strips, and related material
242	COMMON	R	All purpose PCRelay conf. q&a, comments, intros
492	CONTROV	F	Controversial topics and discussion
493	COOKING	F	Cooking and recipes discussion
44	CUISINE	I	General discussions on food and restaurants
300	CUISINE	R	Food, restaurants, shopping tips and recipes
241	CURRENTE	R	Current political or social issues
341	DEADHEAD	R	A conference for Grateful Dead fans
498	DEMOCRAC	F	Politics and policy discussion
336	DRWHO	R	For Doctor Who fans
335	ECOLOGY	R	Discussion about our ever changing world
52	EDUCATN	I	Discussion on teaching techniques and methods
502	EDUCATOR	F	Educator discussion
328	ENGINEER	R	Technical discussion of interest to engineers
252	ENTERTAI	R	Current movies, books, TV and radio
56	FSF	I	Fantasy and Science Fiction topics
54	FEMINISM	I	Womens issues discussion
505	FILM	F	Film buffs discussion
266	FINANCIAL	R	Stocks, bonds and investments
359	FIRE-EMS	R	EMS/Fire personnel and anyone else interested
506	FIREARMS	F	Guns and ammo discussion
325	FIREARMS	R	All kinds of firearms. Selling is forbidden here
55	FRANCE	I	French gateway to Paris, French language
509	FREEDOM	F	Discussion on the rights of Americans
331	GADGETS	R	Discussion of gadgets and where to get 'em
57	GAMBLING	I	Discussion of gambling and methodology
400	GAMBLING	R	Discussion of gambling
369	GAMEDESI	R	Discussion covers all types of games
58	GAMING	I	Arcade and video games
392	GEMOLOGY	R	A conference for the avid rock collector
315	GENETICS	R	Genetics, and its impact
415	GLOBALUP	R	Talk to users in U.S., Canada, Europe and Japan
387	GOSSIP	R	Entertainment Gossip
313	GOUTDOORS	R	General discussion on enjoying the outdoors
511	GROUNDS	F	Medical topics and discussion
60	GUNS	I	Discussion of different guns, etc
512	HAM	F	Amateur radio operators discussion

General Discussion Topics (cont.)

#	Name	Echo	Description
251	HAM	R	HAM radio equipment, problems and trends
61	HAMRADIO	I	Amateur "Ham"radio enthusiasts
62	HANDICAP	I	Discussion between disabled users
281	HANDYMAN	R	Discussion on do-it-yourself projects
66	HEALTH	I	Discussion of health and medical issues
67	HERITAGE	I	Family roots and genealogy research
232	HOBBIES	R	General hobbies discussion
69	HOMEGARD	I	Information and advice for homeowners
346	HORROR	R	A forum for discussion of horror movies, books, etc
68	HISTORY	I	History debates and general history conversation
270	HISTORY	R	Serious discussion about historical events
71	INVESTOR	I	Financial advice and investments
233	JAPAN	R	General topics about Japan
72	JAZZ	I	Jazz music appreciation
282	JOBBANK	R	Listing of jobs wanted and jobs available
517	JOBS	F	Want Ads and general job topics discussion
73	JOBS	I	Jobs, help wanted and advice to job seekers
74	KIDS	I	Special conference for kids 3-14 years only
77	LEGAL	I	Current legal topics by legal professionals
279	MAGICK	R	Discussion about magic
81	MEDICAL	I	Conversations between medical practitioners
247	MEDICAL	R	Current health issues and medical techniques
80	MEDIA	I	Movie reviews, television, books
82	MEMORIES	I	"Whatever happened to","general reminiscing
340	MEN-S	R	Discussion of issues that relate to men
394	MENSA	R	A conference for Mensa and Non-mensa members
235	MILITARY	R	Military discussion and topics
236	MISSING	R	Listing of missing children - updated weekly
361	MOTORCYCL	R	This conference is for all of the motorcyclists
88	MOZART	I	Traditional and contemporary classical music
523	MUSIC	F	General Musical topics, just about everything
264	MUSIC	R	Discussion include all types of music
398	MUSICIANS	R	Geared specifically toward performing musicians
296	MYSTERY	R	Mystery writers, novels, television, etc
376	NINTENDO	R	For the kids to discuss Nintendo games
362	NON-PROF	R	Information effecting the Non-profit organizations
382	NOSMOKIN	R	Discussion on various ways to quit smoking
97	OPINION	I	Political, social, and environmental issues
100	OUTDOORS	I	The great outdoors! Boating, hiking, and more
527	PACKET	F	Packet radio discussions
102	PARENTS	I	Talks between parents about child-rearing & birth
312	PARENTS	R	General discussion between parents
106	PETS	I	Pet health problems, general nature about animals
237	PETS	R	Pet health problems, general nature about animals
306	PHILOSOP	R	Classical and modern philosophers and issues
107	PHILSPHY	I	Philosophy, mysticism, and the occult
530	PHOTO	F	Photography discussion
249	PHOTO	R	Photographic techniques, equipment, etc
108	PHOTOSIG	I	Special Interest Group on photography
110	POLICE	I	Law enforcement and criminal justice
363	POLICE	R	Partner to the EMS/Fire conference
531	POLITICS	F	Political discussion
111	POLITICS	I	Political and social issues
305	POLITICS	R	Debate political and social issues
112	PSYCH	I	Human psychology discussion
337	RADIOCON	R	Radio controlled toy discussion
540	RANDOM	F	Random topics and discussion
116	RCMODEL	I	Radio controlled modeling; airplanes, cars, etc
117	REAL_EST	I	Discussions between real estate agents
406	REALESTA	R	Advice on how to best list and find a house
118	RECOVERY	I	12 step recovery treatment and companionship
299	RECOVERY	R	A conference devoted to addictions and recovery
360	RELATION	R	Issues and concerns common to relationships
324	RELAYUSE	R	Public conference for PCRelay users
119	RELIGION	I	Religious - oriented discussions
303	RELIGION	R	Different religions and religious issues
395	REMEMBER	R	A conference dedicated to memories, good and bad
381	ROBOT	R	Dedicated to the discussion about Robots
121	ROCKROLL	I	Recent trends in Rock and Roll groups & techniques
269	ROOTS	R	Discussion related to researching Family History
147	SATELLIT	I	Satellite equipment, uses and legalities
416	SATELLITE	R	Satellite equipment, uses and legalities
122	SCIENCE	I	Discussion of Science and scientific methods
421	SCIENCE	R	Scientific issues of the day
263	SCIFI	R	Science fiction books, movies, etc

General Discussion Topics (cont.)

#	Name	Echo	Description
239	SCOUTING	R	Scouting topics and discussion
326	SCUBA	R	Dedicated to the SCUBA divers
316	SENIORS	R	A conference devoted to seniors over 55
125	SMALLBUS	I	Starting and running small business enterprises
297	SMALLBUS	R	Discussion about working in your residence
541	SPACE	F	Discussion of flight and space
126	SPACE	I	Discussion of flight and space
127	SPORTS	I	Current sports issues; baseball, football, etc
245	SPORTS	R	Sports and upcoming sporting events
128	STARTREK	I	Star Trek - The Old and the New Generation
312	STARTREK	R	Star Trek - The Old and the New Generation
542	STRANGE	F	Discussion of strange and unexplained phenomena
393	STRANGE	R	Discussion of strange and unexplained phenomena
274	TEENS	R	A conference limited to those between 12-19
134	TRANSATL	I	Conversation between USA and UK and Scandinavia
135	TRAVEL	I	Discussion of travel, foreign and domestic
545	TREK	F	Discussion of Star Trek Ideas and Technology
322	UNFOLDIN	R	Discussion focusing on spiritual extension
258	UPLINK	R	General chit-chat conference
272	VACATION	R	Light discussion on vacation planning
139	VETERANS	I	Forum for US Armed Forces with the Veterans Admin
291	VETERANS	R	Discussion concerning Veterans
140	VIDEO	I	Video technology and professional formats
404	VIDEOEXC	R	A conference for trading of video programs
412	WAR-ZONE	R	Vent your anger, carry on heated flaming debates
549	WARNING	F	Consumer Warnings and discussions
373	WEATHER	R	Discuss weather from scientific standpoint
386	WEB	R	A place for the computer widows
383	WEIGHTMN	R	Discussion on various weight loss programs
143	WOMEN	I	Women and women's concerns
307	WOMEN	R	A conference devoted to women's issues
298	WOMEN-ON	R	For Women to discuss virtually anything, except men
145	WRITERS	I	A forum for writers of fiction and non-fiction
273	WRITERS	R	Helpful hints on getting published

Items For Sale

#	Name	Echo	Description
30	BUY-SELL	I	Advertisements by users to buy and sell
487	CFORSALE	F	Commercial items for sale
508	FOR-SALE	F	Advertisements by users to buy and sell
230	FOR_SALE	R	Advertisements by users to buy and sell

Computer Related Topics

#	Name	Echo	Description
12	AI	I	Artificial Intel., expert systems, hypertext
14	ANSI-ART	I	ANSI and ASCII art and cartoons
329	ANSICODE	R	Ansi messages, screens, drawings or anything Ansi
403	ARCHIVIN	R	Archiving/Compression programs in use today
350	BATCH	R	Support for Batch Files
480	BATPOWER	F	DOS .BAT file discussion and help
23	BASICS	I	BASIC computer languages, bugs and user tips
275	BBSADS	R	A conference devoted to the placement of BBS adds
25	BBS-ADS	I	National advertisements for bulletin boards
357	BBSSOFT	R	Where all sysops can discuss BBS's
24	BUILAPC	I	Discussion and help on building your own PC
31	BYTEBRO	I	Byte Brother's offensive verbal mudslinging
332	CAD	R	Computer-aided design conference
33	CADD	I	Computer-aided design discussion, all types
35	CAVEAT	I	Problems and praise for computer related vendors
485	CDROM	F	CD-ROM discussion and help
489	CHICBM	F	Chicago area Commodore discussion and help
490	COMM	F	Modems and communications discussion and help
246	COMMUNIC	R	Modems and communications hints and help
41	COMPRESS	I	General compression conf. - ZIP, ARC, LZH, etc
378	CMPTRUSE	R	A place for all Computer User Groups
491	CONSULTI	F	Computer Consulting
42	CONSULTG	I	Experiences and strategies in consulting
43	COSUARD	I	Coalition of Sysops & Users Against Rate Discrimination
45	DATABASE	I	Database management systems and user help
255	DATABASE	R	Technical discussion of the major databases
496	DATAFLEX	F	----------
374	DATAPROT	R	The conference will deal with virii, trojans, etc
497	DBASE	F	Dbase and clones discussion and help
47	DESKTOP	I	Desktop publishing, laser printers
244	DESKTOP	R	Desktop publishing and hardware
311	DIPLOMAC	R	On-line diplomacy game
278	DISABLED	R	Software and hardware geared towards disabilities

Computer Related Topics (cont.)

#	Name	Echo	Description
49	DOSTIPS	I	Help with the DOS batch files, tips and tricks
500	DR_DEBUG	F	Technical advice and help
503	ET	F	----------
271	FANTASY	R	Various on-line Role Playing games
367	FRACTALS	R	This conference deals with fractals and Chaos
267	GAMES	R	Commercial, shareware, video and computer games
510	GAMING	F	Computer gaming hints and discussion
59	GRAPHICS	I	General graphics and Computer Aided Design (CAD)
259	GRAPHICS	R	All forms of computer graphics, animations, etc
63	HARDDRIV	I	Hard disk drives, controllers, and maintenance
250	HARDDISK	R	Hard Drive discussion for all types of drives
64	HARDWARE	I	Technical discussion on IBM compatible hardware
518	LAN	F	Local area network discussion and help
262	LAPTOP	R	Dedicated to the users of Laptop computers
372	LASERPRI	R	Supports all brands and models of laser printers
519	LASERPUB	F	Desktop publishing discussion and help
253	LOCAL-A-	R	Technical discussions on local area networking
79	MAINFRAM	I	Mainframe/mini computer systems
334	MAINFRAM	R	VAX and IBM mainframes
83	MICROHEL	I	MicroHelp discussion and help
84	MIDI	I	Computerized musical talents and discussion
283	MIDI	R	Discussion around MIDI software
520	MIDRANGE	F	Midrange computers (Minis) discussion and help
86	MODEMING	I	General use of modems and communication packages
402	MODEMNEW	R	About the on-line magazine, Modem News
522	MTASK	F	Multi-tasking help and discussions
277	MULTITAS	R	Discussion of various multi-taskers
90	MULTITSK	I	Multitasking and memory management programs
525	NET_DEV	F	Network software development discussion and help
91	NETNEWS	I	Official announcements from ILink Administration
93	NETWORKS	I	Discussion on networking hardware and software
92	NETUSERS	I	Forum for users to chat with ILink management
304	NEURALNE	R	Brain-maker software and neural nets
419	NEWUSERS	R	New BBS users q&a conference
280	ON-LINE	R	Discussion of various on-line services
314	ONLINEBA	R	On-line baseball league, complete with teams
285	SHAREPGM	R	Discussion of various shareware programs
123	SHARWARE	I	Discussion and support for any shareware program
124	SIMULATR	I	Flight Simulator and other realism-type games
347	SOBB	R	Problems of phone companies harassing Sysops
248	SOFTREVI	R	General q&a on various software packages
260	SPREADSH	R	Discussion about different kinds of spreadsheets
389	SYSANALY	R	Discussion on System Analysis
130	TAGSRUS	I	Tagline Contest
131	TECH	I	Technical discussion on IBM compatible PC's
243	TECHNICA	R	The technical side of computers
141	VIRUS	I	Discussion on viruses and destructive programs

Vendor & Specific Product Support Topics

#	Name	Echo	Description
10	1-2-3	I	Popular spreadsheet topics, 1-2-3 and Excell
11	4DOS	I	Author support for this COMMAND.COM replacement
344	4DOS	R	Support for 4DOS
475	80XXX	F	Intel 80XXX user discussion
375	ADLIB	R	Technical support of the ADLIB card
13	AMIGA	I	Amiga computer software and hardware talk
227	AMIGA	R	Amiga computer discussion and help
339	APPLE	R	q&a about the Apple II and Apple GS computers
353	ATARI-ST	R	User support for AtariST computers
408	AT-APPS	R	Ashton Tate Direct Support of NON dbase products
407	AT-DB	R	Ashton Tate Direct Support of dBase
19	ATT	I	Vendor support for AT&T's family of computers
28	BOYAN	I	Boyan telecommunication software with Justin Boyan
338	BOYAN	R	From the AERO BBS, official support for Boyan
399	BRIEF	R	Support for "C/LISP" type of macro language
228	C64-C128	R	Commodore C64/C128 discussion and help
484	CBM	F	Commodore 8-bit discussion and help
38	CLIPPER	I	Clipper database language and techniques
323	CLIPPER	R	Technical help with Clipper
385	COCO	R	Discussion on and about the TRS Color Computer
371	COMMO	R	Supports a new comm program, written in ASM
499	DESQVIEW	F	Quarterdeck DesQview users
290	DESQVIEW	R	Discussions on the DESQview and API programming
48	DOORWAY	I	Marshall Dudley's remote communication utility
50	DSZ-OMEN	I	Vendor support for Omen Technology's DSZ product
390	EISBBS	R	Support for Users and Sysops of EIS Software
53	EZREADER	I	EZ-Reader vendor support by Tulsan Eric Cockrell
318	EZREADER	R	Support for those using EZ reader
348	FASTCOMM	R	FastComm modem factory support

Vendor & Specific Product Support Topics (cont.)

#	Name	Echo	Description
309	GAP	R	For sysops and users of GAP BBS Software
379	GTBBS	R	Support the many GT BBS's in use today
65	HAYES	I	Discussion with Hayes Microcomputer
231	HAYES	R	Discussion with Hayes Microcomputer
514	HST	F	USRobotics Courier HST discussion and help
288	IBM	R	Various topics regarding the IBM PC
405	IOMEGA	R	Direct support for Bernoulli drives
234	LANTASTI	R	Lantastic Networking discussion and help
292	LOTUS	R	Direct Support by Lotus for Lotus software
254	MAC	R	Discussion specific to the Macintosh computer
78	MACNTOSH	I	Conversation between Macintosh users
368	MAJORBBS	R	This conference is for MajorBBS owners
351	MARKMAIL	R	Support for the MarkMail Door
388	MEGAMAIL	R	Support for the MegaMail off-line reader
521	MINIX	F	MINIX help and discussion
85	MM-RNET	I	MarkMail and Rnet software support conference
89	MS-WORD	I	Word processing with Microsoft's product
342	MSWORD	R	For support of Microsoft's Word
310	OMEN	R	Support conference for Omen Technology products
526	OS2	F	OS/2 discussion and help
99	OS2	I	Users and developers of IBM's OS/2 software
327	OS-2	R	OS/2 software, development and uses
532	PS_2	F	PS/2 discussion and help
539	RAINBOW	F	DEC Rainbow Computer discussion and help
101	PARADOX	I	Paradox database application language discussion
377	PCJR	R	For the users of IBM's Orphan, the PCjr
529	PERFECT	F	WordPerfect discussion and help
401	PICK-OS	R	PICK Relational Database, Operating System
109	PKWARE	I	PKZip / PKUnzip discussion with author Phil Katz
286	PKWARE	R	Direct support for all of the PKware products
354	PROCOMM	R	User support for ProComm or ProComm +
113	QEDIT	I	Qedit powerful editor with author Sammy Mitchell
366	QEDIT	R	Direct product support conference for QEdit
114	QMAIL	I	Qmail door, Qmail / Deluxe, Qnet with Mark Herring
417	QMAILREADE	R	Support offered to all users of the qmail reader
115	QMODEM	I	Qmodem SST support with author John Friel
287	QMODEM	R	Direct support for the Qmodem
534	QM_ECHO	F	QM support
533	QMX_XRS	F	Quickpoint Express help
535	QNX	F	QNX discussion and help
536	QNX_DEV	F	QNX development discussion and help
537	QUICKPRO	F	Quick BBS discussion and help
365	RBASE	R	Support for RBase provided by experienced users
261	RBBS	R	Technical discussion on RBBS software
120	ROBOCOMM	I	Comm package to support Qmail, with Dan Parsons
364	ROBOCOMM	R	Produce support of Robocomm from the author
391	SEARCHLI	R	Forum provided for Searchlight Sysops and Users
396	SPITBBS	R	Discussion involving SPITFIRE related software
370	SPITFIRE	R	Use and maintenance of the SPITFIRE BBS
418	SPITMAIL	R	Use and maintenance of the SPITMAIL system
146	TANDY	I	Support for Radio Shack computers
349	TANDY	R	Support for Radio Shack computers
343	TELEMATE	R	Vendor support for Telemate
544	TELIX	F	Telix communication user discussions and help
132	TELIX	I	Telix communication by author Colin Sampaleanu
294	TELIX	R	Direct support from Telix
411	TLX-HOST	R	Support for the Telix Script "HOST3"
133	TOSHIBA	I	Vendor support from Toshiba's laptop division
547	UNIX	F	UNIX discussion and help
137	UNIX	I	Discussion of the UNIX (tm) operating system
301	UNIX	R	Discussion of the UNIX (tm) operating system
138	USRMODEM	I	Technical discussion on US Robotics modems
257	USROBOTIC	R	Technical discussion of all USR products
548	VAX	F	VAX discussions and help
293	VENDORS	R	Various vendors who don't have their own forums
358	WILDCAT	R	User based support for the Wildcat! BBS
550	WINDOWS	F	Windows discussion and help
142	WINDOWS	I	Microsoft Windows and programming
276	WINDOWS	R	Windows or Windows386 related software
144	WORDPERF	I	Word Processing Software, with WordPerfect support
289	WORDPERF	R	Direct support from the WordPerfect Corporation
240	XEROX	R	Xerox discussion and help
330	XYWRITE	R	Support for the word processor XYWrite
384	ZCOMMPRO	R	Discuss ZCOMM & PRO-YAM. Note: No DSZ

Computer Programming Topics

#	Name	Echo	Description
16	ASM	I	Technical programming discussion on assembler
494	C_ECHO	F	C programming discussion and help
32	C-LANG	I	Programming in the C computer language
495	C_PLUS	F	C++ programming discussion and help
320	CLANGUAG	R	Technical help in programming with C
501	ECPROG	F	Non-C programming discussion and topics
229	FORTH	R	Forth programming discussion and help
75	LANGUAGE	I	General discussion of programming languages
355	MASM	R	Macro Assembler support
97	OOPS	I	Object Oriented Programming Systems discussion
356	OOPS	R	Object Orientated Programming discussion
528	PASCAL	F	Pascal programming discussion and help
103	PASCAL	I	Programming in the PASCAL computer language
317	PASCAL	R	Borland's TP program and utilities
238	PROGRAM	R	General programming discussion and help
319	QBASIC	R	Technical help in programming with QBasic
538	QUIK_BAS	F	Quick Basic programming discussion and help
546	TURBOC	F	Turbo C programming discussion and help

Adult Related Topics

#	Name	Echo	Description
479	BACKROOM	F-*	*HOT* XXX rated & Gay discussion
600	FANTASY	T-*	*HOT* discussion about sexual fantasies
601	GAY	T-*	Topics pertaining to the Gay Community
345	GAYISSUE	R-*	Discussion concerning gay issues
602	GENERAL	T-*	General topics of all kinds
603	HATE	T-*	What do you hate?
513	HEADROOM	F-*	Very XXX rated discussion
604	ISSUES	T-*	Controversial issues of all kinds
605	JOKES	T-*	Jokes of all kinds
607	PORNO	T-*	Pornography discussion, films, mags, etc
616	PYTHON	T-*	SPAM conference discussion and vulgarity
608	S-AND-M	T-*	Sadism & Masochism topics and discussion
609	SEXHELP	T-*	General sexual help discussion
610	SEXTALK	T-*	*HOT* Sextalk
611	SEXTOYS	T-*	Sex Toy discussion
612	STORY	T-*	On going sexual stories
613	SWINGERS	T-*	Swingers discussion
614	VIOLETS	T-*	*HOT* discussion with Voluptuous Violet
615	WRITINGS	T-*	Discussion on writings

Administrative And Sysop Topics

#	Name	Echo	Description
226	ADMIN	R-*	PCRelay Administration conference
481	BINKLEY	F-*	Binkley Term discussion and help
413	CHINET	R-*	Private discussion between RIME Sysops
380	CONFHOST	R-*	Hosts are asked to join so we can discuss problems
51	DWADMIN	I-*	Data Warp Administration conference
504	FIDO	F-*	Fido BBS sysop discussion and help
507	FN_SYSOP	F-*	FidoNet Administration conference
515	IFNA	F-*	IFNA discussions and help
70	ILNK	I-*	ILink internal administrative conference
409	MINI	R-*	Mini Conf, limited discussion for Network Sysops
524	NET115	F-*	Net 115 Sysop discussions
606	NETADMIN	T-*	Throbnet Administration conference
410	PCRELAYSPT	R-*	Dedicated to the support of PCRelay software
129	SYSOPS	I-*	Operation of bulletin boards, mostly PCBoard

You may join any conference listed by typing 'J conf #' or 'J conference name' from the main prompt.

Although many conferences are duplicated, they are echoed from separate networks and will contain a totally different set of messages.

Use the QMail Door 4.0 (Door #2) to download messages, to be read and replied to off-line at your leisure. Download the file "USEQMAIL.ZIP", for instructions on using QMail.

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We found a remarkable BBS in Washington D.C. sponsored by a group that calls itself the **Project on Military Procurement**. The BBS is titled, appropriately enough **SNAFU** and is available at **202-543-0883**. For those who were never in the Military and aren't aware of the acronym, the polite definition is Situation Normal - All Fouled Up. Greg Williams and Andy Steinback operate the system and it seems to be aimed at providing a somewhat biased research facility for journalists doing hatchet stories on government agencies, defense contractors, and weapons systems.

The reason they have such a wide market to draw from, is such subjects are easy targets for aspiring journalists. As Ronald Reagon can now attest from experience, the government bureaucracy has reached such proportions that it is beyond law, beyond control, and probably beyond the power of anyone to stop - short of violent civil war that simply snuffs life from one side or another. And it's growing daily. Rather than classes of wealth and classes of poverty, our nation seems to have birthed two classes, those firmly sucking the teat of public largess through a government bureaucracy, and those who do not. If current trends continue, the former group will have the wealth and the latter the poverty, followed shortly thereafter by poverty aplenty for all.

SNAFU provides a wealth of information about weapons systems procurement gone awry, weapons that don't work, congressional hearings, and secrecy issues. We found **109 "Project Reports"** on everything from the infamous Lockhead toilet seat to some serious problems with the **$4.3 million** Abrams M1 tank. C-5A spare parts overpricing, faulty Navy acceptance tests for RPV (drones), and over a hundred other fiascoes are online for your reading pleasure.

The service also provides an online handbook for whistle blowers titled ***Courage Without Martyrdom***. Despite the optimistic title, this little literary masterpiece is guaranteed to make your blood run cold. It describes in gory detail the almost unbelievably dirty and very deliberate ways the bureaucracy has developed to terrorize and economically and socially castrate the traitors within who call attention to government waste and mismanagement. Government wast is clearly NOT a case of benign neglect or leisurely inattention caused by the lazy and those unconnected to real world economics. This bureaucracy can be most deliberately and fiendishly cruel to those who attack it in any manner.

Courage Without Martyrdom paints a bleak picture of what you can expect as a whistle blower. Confidential HOTLINES that aren't, the hazards of the Freedom of Information Act, and dozens of case histories outlining what actually happened to people who did blow the whistle on government waste and mismanagement so rampant they felt they had to do something - even at the cost of their careers. This piece is written in such a way that we don't even consider Stephen King a contender in this very competitive tale of horror.

If you are in any way involved in the Defense industry, you should make a stop to this inelegant little RBBS system, BEFORE you consider naively pointing out the millions that your company or government agency may be flushing down the local sewer, to at least get a realistic look and some tips for survival from what may lie ahead. This is a most chilling, alarming, and depressing BBS. Greg Williams can be reached voice at **202-543-0883** or by fax at **202-544-3729**.

EVENT HORIZONS BBS - ADULT GRAPHICS AND LOTS OF THEM - AT A PRICE.

by Alan D. Applegate

When you think of the online community, you probably envision a large and rapidly growing group of computer users who have discovered the modem and understand what a marvelous tool it really is. But there are other attributes that are practically unique to the online community that have nothing to do with communications specifically.

A case in point - graphic images. It's rare to encounter a general purpose public bulletin board system that doesn't have a file section devoted to bit mapped images of all types and subject matter. A large subset of the online community spends hours downloading megabytes and megabytes of their favorite cartoon characters, scanned pictures of people they'd like to meet, vivid color images of models in various stages of dress or undress, or even clip art that can be incorporated into desktop publishing chores back at the office. There is relatively little of this activity outside the online world and it is becoming increasingly popular within it.

It's unlikely, however, that you'll anywhere find quite the selection of these images that Jim Maxey's **Event Horizons BBS** at **503-697-5100** in Lake Oswego Oregon has in its collection. Maxey appears to be a one-stop shop for hundreds of these images, specializing in high resolution, full color pictures. His "MaxiPic" images are well known for their quality.

All the images on the system are in CompuServe's popular Graphics Interchange Format (**GIF**) and can be viewed on a wide variety of computer platforms. A collection of file viewer and format converter programs are also available for download.

Running **32** incoming telephone lines on a TBBS system, access is provided at speeds up to **9600 bps**. The privilege of accessing this collection is not cheap. 1200/2400 bps access costs **$10** per connect hour, while 9600 bps access costs **$40** per connect hour. High resolution color images - which because of their random nature are hardly affected by compression software such as **PKZIP** - are not small files, with sizes typically between **100KB** and **200KB** each. Still, you won't find this collection elsewhere, as Maxey

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The extremely popular game of **StarQuest**. This is the first multi-player, multi-user space game to run under TBBS/TDBS. You can create a universe of a size that is best for your system and its users and your users create and capture settlements and become active wheeler/dealers across your universe. Their settlements can be attacked and captured whether the user being attacked is on-line or off, and as the users gain in strength and worth the computer controlled pirates and the tax assessor will be there to lend a helping hand. This on-line multi user game has already proven itself to be popular with the users and it's not only a lot of enjoyment for them but it can quickly pay for itself on systems charging for access. This program is priced at $149.95.

The powerful and productive **On-Line Sales Manager**. This on-line catalog sales program is written by Jeff Johnson, another pioneer in TDBS software, and it easily shows the power and capabilities of TBBS and TDBS. The Sales Manager will display a catalog of items for sale under categories you specify, each item can have a full descriptive text file attached to it and the user can place an order at any time and continue to browse through the catalog. When done the user selects to order and is presented with each item and given the opportunity to indicate how many are to be shipped. Once all items are ordered the software will check to see if the customer has an account, if not it will prompt for all necessary order information. Developed as a modular package this software will handle everything from a low level order entry system to a fully featured point-of-sale package that will print invoices, track inventory, track billing and do all the things you would expect of a full sales package. It really must be seen to be appreciated. This package starts at $395.00.

There's more available for the TBBS/TDBS SysOp, as well as for anyone interested in an Information System (BBS). If you want to learn more about TBBS/TDBS just call our system and carefully browse through Our Demonstration and Sales Area and take the time to register as a customer. GW Associates offers full support to all SysOps and we have several excellent programmers available to help with your applications and customization. Please call our system at (508) 429-1784 (N,8,1) and keep up with our new releases or call us on our voice line at (508) 429-6227 if we can help you in any way. Installing commercial systems is our ONLY business, and we're very good at it!

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scans or creates many of them himself and prohibits the posting of the files on other BBS.

Adult images - those "R-rated", "X-rated", or in some cases just gruesome are among the more popular. The file list goes on for what seems like forever, with selections for every taste, gender and sexual preference. Of course, dozens of "G-rated" images of all types are available as well. One of the more "nifty" features of the system is the ability for a user to select and deselect file areas they would prefer - or prefer not - to see. If you don't want adult files listed to you at all, simply turn them off. If you want adult files, but don't want the hardcore ones listed, you can tell the system your preference.

Event Horizons also carries a selection of files that Maxey calls "MoviePics" in slide show, Autodesk Animator **FLI** and Paul Mace Software **GRASP** formats.

If you don't want to spend hours downloading your favorite images, Maxey provides facilities for ordering them by item numbers shown online in the file lists or through a catalog you can download. A voice call to Event Horizons with your credit card number will yield disks by return mail. You can even fax your order if your prefer.

There's little doubt that Maxey has been very successful at catering to the electronic image zealot, but the evolution of Event Horizons hasn't occurred overnight.

It was in 1982 that Maxey worked on contract for the Army Research Institute. He helped train personnel to use thermal sight adjustment facilities on M-1 tanks. Part of the training materials were thermal images of tanks. Maxey needed to find a way to store the images, and manipulate them easily. Digitizing the images in black and white (color digitizing wasn't available then) and later color enhancing them for use on a computer was Maxey's first exposure to electronic imaging.

In 1984 Maxey got the idea to start a BBS while in Texas for the Institute. A long search ended in his selection of TBBS, one of the few commercial packages available at that time. Imaging wasn't a major issue then, so he focused on other things of personal interest: astronomy, human rights, science. He decided to make the system a playground of education quizzes and intelligent conversation, and with its unique and challenging features, the system proved to be unusually popular. Maxey decided then to add images to the system, although at that time it was difficult because there were no programs around that allowed people to view the images.

At the end of his contract, Maxey returned to his home town of Portland, Oregon. It was on his return that he wanted to try something new - a color image. Up until that time, digitized images were black and white, or were colorized black and white. Maxey devised a way to run the image through three passes - red, green and blue - and compose a true color image, which he claims was the first such image created on and for MS-DOS based systems.

Maxey focused primarily on image subjects of interest to him: nature scenes and the like. The concept proved remarkably popular, and he decided to charge an hourly rate for the system's use.

In 1987, CompuServe established the **GIF** image format. Its promise interested Maxey greatly, as it provided a means for images to be displayed on multiple computer platforms.

Maxey's Event Horizons has grown from being run in his apartment out of a cardboard box "filing cabinet" to today - a 32-line system with nearly 1.5 Gigabytes of images online and a full-time staff of eleven people. Maxey says the system's capacity will be increased to over 2 Gigabytes soon.

The success of the concept is proven by the willingness of people to pay for the services provided.

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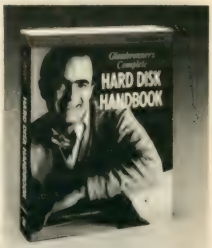

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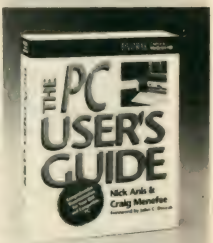

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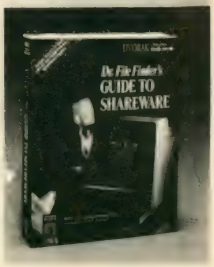

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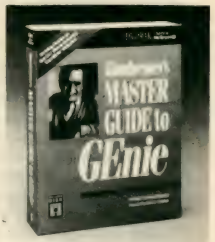

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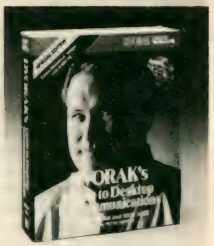

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BBS ON THE FLY - BOARDS FOR BIRDWATCHERS

by Alan D. Applegate

Your non-computerized friends may well believe that BBS are for the birds. This column will prove how right they are, as we examine BBS for the birds. Bird enthusiasts (and hence bird BBS) take one of two basic forms: those who enjoy exotic birds in their own home (bird keepers) and those who want to enjoy the native American species in their natural habitat (bird watchers).

Our first stop is of the bird keeping variety, and the search didn't take long. Right in our own backyard (at least from a bird's perspective) Terry Rune operates the **Bird Info Network** in Arvada, Colorado at **303-423-9775**. Online only since December 14, 1990, the system operates two lines using Galacticomm's Major BBS.

Rune is definitely into birds. She is Editor of the bi-monthly ***National Cockatiel Society Magazine***, which she produces on her Macintosh. Rune is also active with the Rocky Mountain Society of Aviculture, The Society of Parrot Breeders and Exhibitors, and The American Federation of Aviculture. She definitely knows her stuff.

It was computer love, however, that got Rune interested in bulletin boards. After a fruitless search for satisfactory BBS software for the Mac, she "borrowed" her husband's PC to test some shareware BBS packages. Still unsatisfied, she settled on purchasing the Major BBS and its Shopping Mall option. Rune hopes to provide facilities for users to order bird supplies online in the near future.

Rune and her husband aren't new to birds or selling pet supplies. Several years ago, they purchased a pet store in Boulder, Colorado. Disappointed with the quality of birds available for resale, she decided to breed her own. Neither of them enjoyed the retail aspects of running the store, which they sold after two and half years to concentrate on bird breeding.

Cockatiels are a focus for Rune, winning Best Cockatiel in Show on her first foray into showing in 1985. With friends Dave and Linda McCluggage of Boulder, Rune and her husband have been enjoying their success in breeding African Grey Parrots.

Dave, actually Dr. Dave McCluggage, DVM, is resident veterinarian on Bird Info Network. A past president of the Association of Avian Medicine, he is highly respected in the field of avian medicine. In the short time since the system has gone live, Rune's husband insisted that another computer be purchased for the BBS. It's now driven by its own 286 machine.

Rune says the real reason she wanted to start her own system was the lack of in-depth information being offered by other national boards. Rune and her long time acquaintances in the bird community use the board to provide a

thorough understanding of the subject. From breeding, taming and behavior to owning, handfeeding and avian diet, you'll find just about anything relating to birds on Bird Info Network. The system already lists several hundred messages and a few dozen files in the SIGs. Bird Info Network, P. O. Box 632, Arvada, CO; **303-423-9775** data; **303-422-6529** fax.

We decided to go west for our next stop, to **The Twilight Zone** in San Leandro, California, a BBS of the bird watching type. This single line Telegard system operated by Ken Jones features several sections for bird lovers in addition to a variety of other subjects. The system started life three years ago with an Apple based BBS, and switched to the IBM platform a year ago.

Jones' wife and Joe Morlan, one of the system's users, manage the bird related areas. Morlan is an instructor and avid birder, and handles the transcription and posting of Rare Bird Alerts, or RBAs. These are actually voice recordings taped on a regular telephone answering machine, and made available to birders by phone.

The system carries two of the national FidoNet bird related EchoMail areas, and has a file area devoted to the topic. The Twilight Zone, San Leandro, CA; **415-352-0433** data.

We fly to the southwest next, where we land on the modem of Chuck Williamson and his **Southern Arizona Birding BBS** in Tucson at **602-881-4280**. A single line Opus system, it features four message areas of RBAs - for Arizona/New Mexico/Colorado, Texas, Midwestern and Eastern regions. These weekly reports list bird sightings in their respective region, where they are, and what to look for. There are also general discussion message areas for bird fanciers.

Williamson tells an interesting story of the system's history. He and his wife Sharon met at the University of Arizona in 1982. He was enrolled in the Ornithology class there, and Sharon was a teaching assistant in the required bird lab. After numerous field trips over the course of a semester and the summer vacation that followed, the two began living together and later married in 1985. It was Sharon's influence that ultimately led to the BBS they run.

It was back then that Sharon taped the Rare Bird Alerts (RBAs) for the local Audubon Society office. These taped recordings are a telephone call away in over 100 locations throughout the United States, and contain information on bird sightings, as well as local activities, Audubon field trips, meetings and so on. In 1988, Williamson enlisted the services of a local BBS Sysop to allow the posting of transcripts of the RBAs.

Chuck and his wife actively participated in local BBS, including one at the University. By late 1989, they had begun moderating a section on the University's system for bird enthusiasts. They started transcribing the RBAs from other areas, and posted them and their own local RBAs on the BBS as well, hoping to stir more interest among local birders.

One of the users who called regularly was Norm Saunders, who Williamson later learned was the Sysop of The Osprey's Nest, a Maryland BBS for birders.

Williamson learned that an Audubon office in neighboring New Mexico began offering the RBAs on tape, and he started to transcribe those as well. Being unfamiliar with the geography of the area, numerous errors unavoidably found their way into the transcripts.

Pat Snider, the compiler of the New Mexico RBAs, was modem equipped, and ultimately learned of Williamson's efforts. Snider and Williamson found that they could connect electronically through BITNET via the University, and Snider soon began delivering the written RBAs directly, solving the transcription error problem immediately. Later Saunders indicated he could be reached by BITNET, and thus, the "National Birding Hotline Cooperative" was born, which today hooks several participating BBS and individuals together. RBAs and birding information are distributed throughout the Coop.

It was in Summer, 1990 that the University's BBS lost its support and folded. This put Williamson in the position of losing this important information medium, or putting together a BBS of his own. He chose the latter, hastily putting together a copy of Opus on an old Zenith 158 with just 256KB of memory and a 20 Meg hard disk.

Running the BBS himself allowed Williamson to be more familiar with his callers. Sid Johnson, a Los Angeles (California) area Sysop, had been picking up the reports from the BBS and distributing them in Southern California. As it turned out, Johnson too was on BITNET, allowing easier communication and furthering the goals Williamson had for the system.

Today, several BBS around the country are part of the National Birding Hotline Cooperative. Chuck and Sharon Williamson are still hard at work making the BBS go. Southern Arizona Birding BBS, Tucson, AZ; **602-881-4280** data.

We'll give our wings a real workout to reach our last brief stop: Fran and Norm Saunders, who operate **The Osprey's Nest** in Colesville, Maryland. The Saunders' use ROS software on a single line. Dedicated to amateur naturalists in general and bird lovers specifically, the system features a wide variety of message and file areas. These include botany, wildlife photography, mineralogy, press releases from the Fish and Wildlife Service and more. The Osprey's Nest, Colesville, Maryland; **301-989-9036** data.

Crazy Merl Harbors a Fugitive

by M. Peshota
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When Merl brought Soupy Sloan his daily sack of junk food, he asked the famous shareware author when he was going to come out from under the table and go home. He asked him this everyday, but the answer remained the same. Soupy would crinkle his unshaven chin into a pout as he ripped open a package of Twinkies with elfin vigor and grumble, "Never. I never want to have to answer another tech support call again."

Merl had tried every possible ploy to coax the programmer out of his basement. He had even set off the smoke detector and screamed "Omigod, the SCSI ports are all on fire!" but Soupy remained mulishly crouched beneath the table upon which sat Merl's computer bulletin board system, reading his comic books and software magazines, toying with a laptop computer, and frequently commenting on what the high level of humidity in the basement was doing to the 150 floppy diskettes stuffed in his various shirt pockets.

Soupy had been hiding out in Merl's basement ever since the world's premier golf ball manufacturer had purchased a site-license for his software and his phones began ringing off the hook with calls from aggrieved golf ball manufacturing reps demanding to know whether they were to insert ***Soupy's RAM-Bang Utility*** in their floppy disk drive, their floppy disk holder, or their golf bag.

"I never have time to program anymore. All I do is spend my time on a conference phone trying to explain the difference between a disk drive and a putting green, "Soupy had whined, when Crazy Merl and his wife came home one night to find the best selling software author huddled dazed on their front steps in the pouring rain. He was hugging his C compiler to his chest like a teddy bear and moaning as if he was about to die.

It was not hard for the bulletin board operator and his wife to feel sorry for Soupy, for Soupy was a man who looked like he had lived most of his life in a Save-the-Children advertisement. The only time he did not look forlorn was when his nose was pressed to a computer screen. That's the only time he seemed to have a grip on things. Merl and his wife helped Soupy into the house, dried him and his C compiler off, and nursed him back to health.

But seven months later, the frazzled computer programmer was still living under the computer table in their basement. Every time Merl tried to coax him out and persuade him to go home, Soupy lashed out, "It's all your fault, you fiendish BBS operator! If you hadn't told people about my software, if you hadn't posted it on your bulletin board and told everyone to download it and send me money, I'd still be a happy man. I wouldn't be staying up all night with my lawyers looking for trademark violations of ***Soupy's RAM-Bang Utility***. I wouldn't have had to buy a $500,000 switchboard just to keep customer's tech support calls from going to the extra bedroom where my crazy sister lives. I wouldn't have had to build an office tower with a floppy disk duplicator built into every wall. I would still be nothing but a humble man with a pocket full of spaghetti code and an unintelligible .DOC file."

"I'm sorry," the bulletin board operator would say. "How could I have known it would turn out so awful?"

"If it hadn't been for you," Soupy would continue."I wouldn't be spending all my time running a 452-employee software company. I wouldn't be wasting away my entire life on a screechy conference phone. I could be out having fun, like in the old days, just me and my compiler, wild and free. ***I could be programming!***" He'd howl out that last line bitterly.

So, out of guilt and helplessness, the bulletin board operator continued to let the stressed out software mogul hide in his basement, like a tortured troll. By day, Soupy would sleep, with loud, troll-like snores that would rock the house and cause listeners to drop their newspaper or mop or whatever they were doing and gaze out in fear. By night, he would program, crunched on his Hobbity knees, typing feverishly on a tiny laptop computer that he had found lodged in a closet full of sports equipment that the religiously sedentary BBS operator never touched.

The entire time, Merl dodged inquiries from callers to his BBS who were worried about the shareware author's sudden disappearance from the electronic world. Some staked out Soupy's house, peering in basement windows and examining contents of trash cans, trying to discern when their beloved shareware author had last been there. Some called his software company and pretended they were Diane Sawyer, trying to procure an interview with the reclusive prodigy, although they never got farther than the lawyers looking for trademark violations who screened all his calls. A group waged a campaign to get Soupy's picture printed on the back of CompuServe sign-up kits with the plea "Have you seen this shareware author?"

Others started to suspect that fame had gone to Soupy's easily-distracted head, and he was off in the Caribbean squandering their shareware registrations on red-mouthed Jezebels and garish beach towels. A rumor started that he was spending his time lounging beside California swimming pools, lobbying to get a walk-on part in the next "Beverly Hills Cop" movie, rather than providing much needed bug fixes. At one point, someone suggested that Soupy might be found hiding in Crazy Merl's basement, and the BBS operator spent many sleepless nights

worrying that his subscribers would come knocking on his door and his duplicity found out.

One day, almost eight months after Merl had found Soupy cowering on his steps, the shareware author suddenly emerged from under the table in his basement and announced that he was going home. Unceremoniously, he toddled up the stairs and out the door, his program compiler tucked beneath his arm. The bulletin board operator sighed with relief.

The next day, Merl discovered new software posted on his BBS. It was a completely rewritten version of ***Soupy's RAM-Bang Utility***. It contained many new exciting features, including one which enabled anyone with a $500,000 switchboard to reroute all their incoming calls, with but the touch of a key on a laptop computer, to a pay phone in Baghdad--forever. This was apparently what Soupy had been working on in Merl's basement.

This newest incarnation of ***Soupy's RAM-Bang Utility*** was wildly successful, and Soupy's fame grew and grew, as did his software company and his wealth. The number of phone calls he received also increased tenfold each day. Soupy wasn't even twenty-four years old when he achieved his lifelong ambition of appearing on the cover of "Datamation." He even acquired the funds to found a rest home for overworked computer programmers like himself. The waiting list to get in was a dozen years long.

But less than a year later, tragedy struck. Soupy himself had become so overworked that he had to be confined to his own rest home. He is there to this day. Rumor has it that he spends his afternoons locked in a high-walled garden where all the plants are made of rubber and the swings are pushed by white-coated attendants who try to keep the conversation steered away from quick sorts. "Soupy's only problem is that he became a victim of a business where you're only as good as your next software upgrade," his mother is known to say. To this day, Soupy still blames for his exhaustion the obliging BBS operator who showed his software to the world.

COMMUNICATIONS BASICS

by Alan D. Applegate

File Transfer Protocols
Part 1 of 2

Newcomers to the online world are immediately faced with a number of choices. These choices seem to absolutely require an immediate decision and too often, none of the options look familiar. When a caller first tries to download a file, the BBS or host system asks them to specify a file transfer protocol. File transfer protocols are simply software programs to transfer files from the BBS to the caller's machine or vice versa. They use various techniques to detect and correct errors in the transmission. While many new users agonize over the choice of protocol to download a file, in one sense it really doesn't matter. As long as the protocol the user tells the BBS he will use and the protocol he selects on his communication program are the same, the transfer will occur as advertised.

So why so many choices? If one is as good as another, why list ten different protocols to complicate the situation? Actually, each type of protocol has its own advantages and disadvantages. Just getting the job done by selecting identical protocols does not imply making the best use of your online time and resources. In my last two columns, I've been talking about modem related issues - data compression and error correction. This month, let's switch to another topic that confounds even seasoned telecommunications veterans: file transfer protocols, which I'll call simply "protocols." As the dictionary definition of "protocol" might suggest, file transfer protocols are simply a set of rules on exactly how a file will be transmitted point to point.

Protocols come into play when you initiate a file upload or download, to or from your computer and another computer or host. Different protocols have different characteristics, and as such, it's important to know how to pick the right protocol for the right circumstances. Picking the wrong one can waste both time and money.

Of all protocols currently in use by microcomputers, **XMODEM** is by far the most pervasive. Most other common protocols are either direct variants of **XMODEM**, or are cousins to it, using the same basic theory to get the job done.

XMODEM was developed by **Ward Christensen** of Chicago in 1977 and was original simply referred to as "the modem program" or **MODEM**. The protocol was developed to satisfy his personal need to communicate with his associates reliably. Christensen readily admits that it isn't the technical elegance of **XMODEM** that has made it so pervasive, but the fact that it was an early entry, that it was placed in the public domain immediately and was very easy to implement that caused it to "take off" as it did.

Although **XMODEM** is fairly mediocre by today's technical standards, it's the one protocol that is practically ubiquitous with communications applications. **XMODEM** and its derivatives work on a very simple principle. Data (usually a file of some sort) is broken into equal pieces. With **XMODEM**, each piece is 128 bytes in size. These pieces are called "packets" or "blocks" and are basically demarcation points used by the protocol. Blocks are sent one at a time, and the receiving end reconstructs an exact replica of the original file block by block until the transfer is complete.

Each block of data must be sent in perfect condition in order to properly rebuild the file on the receiving end. If a single byte is out of place or damaged by telephone line noise, the received file will not be an exact copy and - depending on the type of file - may well be useless.

It is this very problem that protocols attempt to correct. A mathematical algorithm is applied to all the bytes in the data block. The result is a number that is fairly unique to the particular block. In theory, if you change a single bit in a single byte of the data block and rerun the algorithm, you'll produce a different number. The calculated number is sent with the block during the transfer.

The receiving computer applies the same algorithm to the received data block and compares the result to the check number that accompanied the block. If they match, it assumes the block was received intact, and sends an acknowledgement (called an **ACK**) which signals the sender to deliver the next block. If the results of the algorithm don't match, however, it assumes errors are contained in the block. Instead of sending an **ACK**, the receiver sends a non-acknowledgement (called a **NAK**) which signals the sender to redeliver the damaged block.

This process continues again and again, until all the blocks of the file are delivered intact. As you can see, the process is really very simple at its core. All of the common protocols in use today use some variation on this basic theme.

XMODEM has been in use for well over a decade, but over time several shortcomings in **XMODEM** have been identified. Descendants of **XMODEM** have tried to correct many of its deficiencies and those of earlier decedents, with varying degrees of success.

Protocols as a group possess a set of basic features, with each protocol implementing a subset of them. No protocol to date contains all the features of the others. As a result, some protocols are better choices than others in different situations.

In my next column, I'll go a step further by detailing the properties of each protocol, and giving tips on which protocol to use under given conditions. Choosing the right protocol for the situation can save considerable time and money, where picking the wrong one is robbing you of both.

ERROR CORRECTION refers to a protocol's ability to correct transmission errors. The reason protocols were developed was to DETECT ERRORS in data transmission. Detecting errors is only one step; once detected, errors need to be corrected.

The DETECTION ALGORITHM used dictates how well transmission errors are detected. There are different algorithms that a protocol can use to make these detections. In order from least effective to most effective, the algorithms commonly in use today are 8-bit checksum, 16-bit **CRC** (cyclical redundancy check) and 32-bit CRC. These various methods trade overall throughput and amount of data being sent by the modem for greater sensitivity to data errors. None are 100% flawless, but all provide some degree of protection.

Many protocols also have the ability to send file information (attributes) with the data itself. Different protocols that support this ability send varying amounts of information. For the purposes of this discussion, FILE INFORMATION refers to the ability to send the name of the file, as well as its original date and time stamp.

EXACT FILE SIZE is an important feature of some protocols. Early protocols, such as **XMODEM**, rounded file sizes to the nearest block cutoff. If a file wasn't evenly divisible by the block size, the file was "padded" with control-Z characters - enough of them to make the file cut off evenly at a block. Usually this doesn't cause problems, but some files must not have extraneous data at the end or they can't be used. Newer protocols send the exact file size with the file, so that the receiver can save it exactly as it was stored on the host machine.

BATCH TRANSFER refers to a protocol's ability to send multiple files in a single command or transaction. This allows you to designate multiple file names to download or upload all at once, saving considerable effort when several files need to be transmitted. All batch protocols send the file name at the beginning of the transfer, even if only one file is being sent.

SLIDING WINDOWS is a feature which helps compensate for delayed connections, such as satellite links and packet switching networks (like those you encounter with CompuServe and PC Pursuit). Many protocols, such as **XMODEM**, send a block of data and stop sending until an **ACK** or **NAK** is received. When significant delays occur in the link itself, this waiting can take considerable time. Sliding windows allow the **ACK**s or **NAK**s to trail behind the blocks they correspond to by a certain number of blocks (called the window size) without actually stopping to wait for them.

SEAlink, one of the sliding window protocols, can trail up to six blocks behind. A **SEAlink** transmitter could be sending block **27** while it's receiving the **ACK** for a block as far back as block **21**. This

"elastic" quality yields much greater efficiency than a constant start, stop, start, stop approach.

STREAMING protocols are similar to sliding window protocols in that they don't wait for **ACK**s or **NAK**s. But instead of providing a window, streaming protocols just send data constantly, assuming it's being received fine unless informed otherwise. When a block isn't received properly, the receiver tells the transmitter (sends a **NAK**), otherwise, the receiver is "quiet" during the duration of the data transfer. This adds even more efficiency to the transfer, since data is moving in only one direction in most cases, without any wait cycles. Error correction is difficult or impossible, however, so such protocols work well only on error-free links.

The next element of protocols is BLOCK SIZE. Generally, block sizes are either small (e.g., **128** bytes) or large (e.g., **1024** bytes). Both have their advantages and disadvantages.

Block size becomes an issue with modem speed. Small block protocols were designed in the days where 300 and 1200 bps modems were the norm. Such protocols sent their **128** bytes down the line, waited for a response, then sent more data. The ratio between data transmission time and idle time (waiting for an **ACK** or **NAK**) was appropriate in most cases.

When higher speed modems became available, small block protocols began to show a serious deficiency - they could spend more time waiting for an ACK or NAK than they did sending data. For this reason, large block protocols were developed and greater efficiency was achieved. Although small block protocols are still common, in most cases, you wouldn't want to use them above 1200 bps, unless they are sliding window protocols. At 9600 bps small block protocols are often unbearably slow.

Block size is important for another reason - line quality. When line quality is poor (i.e., there are numerous transmission errors) large block sizes can begin decreasing efficiency. If one single byte of data is damaged in transmission, the entire large block has to be resent. If there are several errors, more time can be spent resending bad data than sending new. Large blocks are therefore most efficient when line conditions are good. Small blocks on the other hand are the most efficient when line conditions are poor, since retransmission takes less time.

One relatively new and specialized feature is DYNAMIC PACKET (or BLOCK) SIZING. **ZMODEM** is currently the only protocol in common use which supports this. It attempts to compensate for the line noise versus line speed issue by dynamically varying the size of the blocks. The initial block size is generally modem speed dependent, and can be quite large (upwards of **8K** bytes each). Midstream block size changes can be made if the number of errors increases during transmission, compensating for variable phone line conditions. Under the worst line conditions, the block size can end up being quite small (as little as **16** bytes). In theory, this means that the optimal block size is used at all times.

Another new feature pioneered by **ZMODEM** was FAILED TRANSFER RESTART. This handy feature means that if a file transfer was aborted for any reason (fatal line noise, operator error, etc.), rather than retransmit the whole file, the transfer process could pickup where it left off automatically. This capability is receiver driven, meaning that the receiving end of the transfer must implement the restart feature. When the original download is attempted over again, the receiver can signal the sender to pick-up from the exact byte offset where it left off.

SuperKERMIT, one of the first protocols to implement advanced features, possesses one unique characteristic - PACKET (or BLOCK) INSERTION. As discussed previously, some types of communications links have tremendous point-to-point delays. When a bad block is received, the receiver must signal the sender to resend the bad block. But with sliding window protocols (such as **SuperKERMIT** or **SEAlink**) the sender may well have sent several blocks before it even gets the signal that a bad block was received. All other protocols move back to the beginning of the bad block, and start resending over again from that point. If good blocks were received after the bad block, they're "dumped" entirely and resent after the bad block is resent, thereby wasting time. SuperKERMIT has the ability to resend only the bad block, then continue where it left off - "inserting" a resend of the bad block in the middle of everything else. This saves time and increases efficiency by not resending data that was already received in good condition.

Some protocols offer **RLE** (run length encoding) DATA COMPRESSION. This means that an algorithm internal to the protocol actually compresses the data being sent over the line. This provides the same benefits as modem-based data compression (discussed in my last column) and programs like **ARC**, **PKZIP**, and so on. Currently, few protocols offer this feature. **SuperKERMIT** and **ZMODEM-90** (a special **ZMODEM** enhancement) are two such protocols.

Most files on your PC are composed entirely of 8-bit characters. In order for most protocols to send such files, an 8-bit data connection is necessary. Most all PC-to-PC connections use an 8-bit data path. For virtually all BBS connections, your communication program parameters are set to **8** data bits, No parity, and **1** stop bit (**8N1**). Some types of connections, particularly to mainframe computers or over some packet switching networks, only allow **7**-bit bytes to pass. Many commercial online services require you to set your comm pa-

rameters to 7 data bits, Even parity, and 1 stop bit (7E1). They use a 7-bit connection.

In order to send 8-bit files over a 7-bit connection, a protocol feature called 7-BIT TRANSPARENCY is required. Such a feature sends 7-bit characters as-is, but specially encodes 8-bit characters so they can be sent as 7-bit characters instead. This technique is also called 8TH-BIT QUOTING. The **KERMIT** protocol was developed by Columbia University to solve precisely this problem and as the first protocol to use such a technique, it is by far the most widely used protocol for use on 7-bit links. 7-bit transparency requires considerable overhead to operate, and can dramatically extend the transfer time of some types of files. It is almost never a good selection over an 8-bit path such as to a BBS, but to transfer files to a commercial service or the company mainframe, it's usually required.

I should note that some types of software used over 7-bit links employ a mechanism called DATA BIT SHIFTING, which allow the use of 8-bit protocols on a 7-bit link. Basically, when an 8-bit protocol is selecting, the link itself shifts to 8-bit for the duration of the transfer, then shifts back down again once it's completed. Both the host and your terminal software must support this feature (many do) or the transfer will not be successful. Online services such as CompuServe, BIX and GEnie all employ this technique, which is why you can use protocols like **XMODEM** even though you dial in at 7-bits.

Another feature that works somewhat like 7-bit transparency is CONTROL CHARACTER AVOIDANCE. This means that the protocol will specially encode any control characters (ASCII **0** to **27**) in the file being sent so that they such characters aren't actually sent down the line. This is necessary on certain types of links because control characters may be used to control certain aspects of the connection. If they're sent as part of a file transfer, a connection could fail. Only specialized situations require this feature.

A feature very similar to control character avoidance is XON/XOFF AVOIDANCE. As I mentioned in my last column, software based flow control works through the sending of two particular ASCII characters - Control-S (**XON**) and Control-Q (**XOFF**). On links that use **XON/XOFF** flow control, it would cause undesirable results if those characters were sent as part of a file transfer. With protocols that incorporate **XON/XOFF** avoidance (such as **ZMODEM**), those two characters are specially encoded so that they're never actually sent down the line if they exist in the file being transferred.

That ends part one of my two part series on file transfer protocols. In my next column, I'll discuss each protocol in more detail, and offer my own suggestions for the best protocols to use in particular situations.

TELEMATE COMMUNICATIONS PROGRAM

by Jack Rickard

Microsoft's new Windows 3.0 has everyone talking about Graphical User Interface (GUI - pronounced "gooey") software. It is fashionable both to proclaim it the only rational way to deal with desktop hardware and to sneer at it as busy-box screens for geeks. But the attraction to GUI for many users is legitimate. The mouse has roared and the computing population has listened.

Additionally, the one truly legitimate need for multitasking on desktop iron is the need to perform other work while your computer performs a software download in the background. Most online users are still doing most of their downloading at 2400 bps and even those enjoying 9600 bps connects simply download more via the batch protocols now available. You simply line up eight or ten files for download and pull the trigger.

Mr. Tsung Hu of St. Catherines Ontario has created a communications package that addresses both the market for a GUI interface and the multitasking function for downloads. The program is titled **TELEMATE**, currently in version **2.11**. We've been watching this program since the 2.00 release and it strikes us odd that there has been so little mention of it. While a bit buggy in early versions, it appears to be pretty stable in its current release despite a vigorously ambitious philosophy.

If you like mice, you're going to lose your water over Telemate. It is indisputably the most "mouse driven" comm program in existence and we're not talking about some mouse driver glommed onto a comm program - this mouse is integral to the program's operation. It lets you do things with the mouse we didn't think were doable. While most comm programs let you use a mouse to drop down function windows, select protocols, etc., Telemate takes this a dramatic and startling step further. You can actually select options from a BBS screen, click on them, and it causes the BBS function to activate. How? It would appear it actually captures the character from the screen and retransmits it out the comm port. The result is that on almost any BBS, you can simply click on the letter of the menu item and it will happen - just like that.

Further, Telemate's mouse interface does something we've NEVER seen before. Let's say you have a list of files on the screen and a prompt at the bottom where you would ordinarily type in one of the file names. With Telemate, you can "swipe" across one of the file names on the screen. The color changes over the area you swipe and the characters are entered at the prompt for you. A click for the ENTER function and you've en-

tered the file name just that easily. With a little practice, this becomes a joy to use.

The program supports two and three-button mice from either comm port. We were pleasantly surprised to learn that if you get in a jam and go through "mouse panic" you can fall back on a very conventional set of ALT key commands that have become virtually standard in shareware communications packages. **ALT-H** still hangs up the modem and **ALT-X** still gets you out.

The program does do windows. They can be pulled down, moved, resized, opened, closed, zoomed, shrunk, overlayed, and switched around to the point where the most avid Window fan can pile up frames till they're completely lost in the pile. Best of all, you can run several operations simultaneously, including access to DOS and use of an excellent little internal editor. The ability to write up a few messages in the editor while downloading files in the background is a very big feature of this program.

A very capable text buffer allows you to review the session up to the minute while those downloads are going as well. And a clipboard with cut and paste features allow you to copy things between the editor and the session capture buffer.

The dialing directory supports up to 1000 entries per directory and multiple directories are available.

In reviewing Telemate, we continuously assumed that because of its easy to use graphic interface, it must be a panty waist. We were wrong. On the technical side, Telemate is not only capable, but actually impressive. So much so, we hesitate to recommend it to beginners even with the graphic interface. The program supports the **NS16550 UART**, several data flow types, and an enormous array of file transfer protocols including internal versions of ZMODEM, YMODEM-G, SEAlink, CIS Quick B, BiModem, JModem, Kermit, and Lynx. It also supports protocols out of antiquity including XMODEM, Telink, Modem7, ASCII, and Relaxed XMODEM. Despite this unusually large array of built-in protocols, you can easily add additional external protocols to the program.

The script language for example is probably the most powerful and at the same time rational we've ever seen. We've actually tried to get TELIX scripts to fetch firewood. But despite our bias in favor of TELIX, the TELEMATE script language really looks good. Advanced structures such as case switching, extremely powerful variable controls, and full access to all Telemate functions from the script language were impressive. Despite these powerful features, the resulting scripts were extremely readable. And for those docu-phobes put off by the excellent 76-page script language manual, a LEARN function makes automatic script generation a very palatable operation. Press **ALT-N**, give it a file name, do your thing, and press **ALT-N** again. The session is recorded for posterity.

The program also provides an enormously powerful macro key and keyboard table. The entire keyboard can be remapped to allow any character or series of characters to be transmitted when any specified key is pressed. You might store your name in one function key, for example, your telephone number in another, city, state, and zip in a third, etc. This can rapidly speed logons if you spend a lot of time logging into new BBS systems.

The program also makes excellent use of hardware. It has nearly a dozen video modes. It will use a variety of types of expanded, extended, and video memory and will swap itself out to EMS RAM or disk whenever necessary. The installation program is very usable and allows the easiest reconfiguration of window/menu bar colors we've ever seen - remarkably cunning. A sample of the display is shown on the right side of the screen while a color table is on the left. The left and right arrow keys will change the foreground color of the current element under examination, while the up and down arrow keys alter the background color. This makes it very easy to try out different color combinations on screen.

The install program also provides another feature we must assume was whimsical. The alarm that sounds when file downloads are completed, connection is made, etc., is actually a little song the program plays. You can select from **21** different ditties including such favorites as The William Tell Overture, Adams Family theme song, the theme from the Jeopardy game show, Beverly Hillbillies, and our personal favorite, the Leave It To Beaver theme song.

The multi-tasking function gets a bit of a mixed review. It works best when performing operations within Telemate such as editing a file, reviewing the capture buffer, or cutting and pasting some text. A drop to DOS is possible but running other programs causes a noticeable drop in download speed with a background download going on. And some disk intensive operations will actually cause it to abort the transfer. The concept is admittedly ambitious, but nonetheless, it needs some further work before it will actually be useful.

Despite the array of functions, the executable is actually only **266KB** in size. Version 2.11 was released 25 May, 1990 in three files, **TM211-1.ZIP**, **TM211-2.ZIP**, and **TM211-3.ZIP**. The documentation by Allan Smith was better than most shareware documentation with an excellent organization, table of contents, and even an index. Registration for the program is **$40**. A version in German is available from **MicroServe GmbH** in West Germany. They have a support BBS there at **49 04298 30 86**. Since his first name sounds a bit like a video chip, Tsung Hu goes by the name Winfred Hu online (an improvement??). He does NOT apparently operate a support BBS at this point. We found him in the TELEMATE support conference on **PC**

Connect BBS in Ontario at **(416)733-9052**. Tsung Hu, P.O. Box 938, Unit 105, St. Catharines, Ontario, L2R 6Z4 Canada.

DOORWAY REMOTE CONTROL PROGRAM

Reviewed by
Craig Menefee and Nick Anis

Doorway, in its most recent release, works much like such popular commercial software packages as PC-Anywhere, Carbon Copy, Remote, and Closeup. It allows you to dial into a computer, drop to DOS, and perform virtually any function you could as if you were at the local keyboard. Unlike its commercial rivals, you DON'T have to have the package on both ends. Once you set up Doorway on your office or home machine, you can dial in from anywhere, at any time, using virtually any terminal program, and have complete control of your machine. Whether it is commercial software or shareware is a bit of a gray area. But it is the best program of this genre available, bar none.

Recently updated by author Marshall Dudley to ver. 2.12, it's historically been regarded in earlier versions as the best way available to let a BBS caller use any ordinary program, such as a game, without taking control of the Sysop's computer. To callers, external programs appear as part of the BBS. It allows callers to open a doorway to the BBS operating system, load a DOS program, and use it until the clock runs out - all the while providing the operator with some security to protect his system. With this latest release, DOORWAY includes its own host communications program and can take on other remote control programs head on as a more general tool for those who just want to dial their system at home and use it.

You can fire up almost any ordinary program, including major applications like Lotus, Word Perfect, and even DOS itself, through a door. The limits of what are and are not available are set by the sysop. In effect, DOORWAY turns external programs into extensions of the BBS.

The core idea was inspired by a 13-year-old with a one-line BBS, who wanted to let his E-buddies play a game he'd written. The game was called EATUMUP -- for Eat'em Up -- and the 13-year-old, Dudley's son Sean, had written it in BASIC. Dudley says he took one look at the boy's EATUMUP code and decided he wasn't crazy enough to try to modify it. It made better sense to let callers drop out of the BBS and run the game directly, by redirecting user I/O. But a Sysop needs a way to keep control. A DOS **CTTY** command just won't do; the only way to regain control without a caller's full and intelligent cooperation is to reboot. Full cooperation is hard enough to get, but intelligent, informed cooperation, from every caller who stumbles around your board?

So Dudley wrote a program to do the redirection. It let the caller control some things, like which way the action flows, without losing control of other important functions, like how much time a user can hog in a single call. The result was DOORWAY, and like many other good ideas, it has taken on a life of its own. Dudley's brain child was just too useful to leave on one, lone BBS, even if it was Sean's.

Dudley's "real job" is with Tennelec/Nucleus, Inc., in Oak Ridge, TN, nuclear capital of the world. His title there is Systems Engineer, and he designs hardware and software for nuclear counting systems. Imagine -- if Dudley screws up a software update at work, he could wind up glowing when he turns out the bedroom lights at night. No doubt it makes him careful. Most of us don't have to write code so precise, but then we also don't get the fun of chasing after nuclear contamination!

Kids grow up and programs evolve. Sean, now 17, is a seasoned sysop. He attends Farragut High School in Knoxville, TN, and runs a five-node PCBoard BBS on the side. It's called **Data World**. The public line, at **615-966-3574**, uses a Hayes Ultra V.32/V.42bis modem and callers do keep it busy, but you can get on if you persist. To play EATUMUP, the game that started it all, drop into Door 5. Like DOORWAY, the game has evolved, and it's quite enjoyable to play.

DOORWAY is now a dual function telecommunications program offering a host terminal that you can use to operate a computer remotely with a modem. It's not only a BBS utility; it's a stand-alone remote communications package as well. DOORWAY offers the same features as more expensive commercial products like Carbon Copy, PC Anywhere, Remote, and Closeup. But like much of the best shareware, it has features its closest commercial rivals lack.

Naturally, DOORWAY is a heck of a lot less costly, too. And it's a lot smaller. It has gained such popularity in the BBS world that a number of communications packages have a DOORWAY mode built into them to provide the necessary codes for full keyboard functionality. For example, both Telix and QModem allow you switch into DOORWAY mode by pressing **ALT=**. This returns the arrow keys, page up and page down, and other keys normally used for comm program functions to their original function for use with other programs controlled remotely. In the later versions, DOORWAY can redirect virtually ANY program through the comm port - even those that use direct screen writes.

DOORWAY's original purpose was not to compete with Carbon Copy or PC Anywhere, though now Dudley is taking on such relative giants head-to-head. His customers, especially corporate types, find that they prefer Doorway for remote terminal access. For one thing, it's easier to use. For another, you only need it at one end -- the host. Most

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Ignp1	(215)348-9727	nixpub List of Open Access UNIX Sites	login:**guest**	Doylestown, PA
Black Bag	(302)731-1998	List of Medical Issue BBS Systems	Edward Del Grosso	Newark, DE
OASIS	(404)627-2662	Home of OAS Atlanta Bulletin Board List	Robert Orr/Online Atlanta Soc.	Decatur, GA
INDEX System	(404)924-8472	INDEX Atlanta Bulletin Board List	Rodney Aloia	Marietta, GA
Deep Thought	(512)244-1598	Home of Central Texas Sysops Assoc. BBS List	Central Texas Sysops Assoc	Round Rock, TX
P.D.S.L.O.	(516)938-6722	Home of THE LIST National BBS List	James Toro	Hicksville, NY
Interconnect	(703)425-2505	Home of Focke's Washington DC Area BBS list	Jeffrey Morley/Mike Focke	Washington, D.C.
Stillwaters	(708)403-2826	Home of Stillwaters Chicagoland BBS List	Colby Jordan /Peter Anvin	Orland Park, IL

If you would like your specialized BBS list included, you may register online by dialing **(501)444-8080.**

remote programs require a copy at both ends. Imagine you're a corporate MIS type, trying to keep track of who's got copies of your registered, commercial remote access program. Imagine the legal department lecturing you about liability and copyright law.

With Doorway, you only need to hand out the password, which you can change anytime. Callers use their own favorite comm programs to call in. DOORWAY screens the calls and then drops callers to DOS, or a menu program, or an E-mail system, or wherever, and allows them to run it from their end.

DOORWAY still lives up to its name by serving as an excellent way to run normal programs on BBSs, as doors. The program is so flexible that you can turn just about any program (including a game written in BASIC) into a door on your BBS.

There are several fine door programming tool kits available, such as Rickie Belitz's C-KIT and the kit for BASIC called DoorPatch. But DOORWAY lets you create doors without having to deal with the carrier, carrier detect, user time, keyboard time or any other communications esoterica. In fact, you can just create a batch file that runs DOORWAY plus an off-the-shelf application, and you're in business. DOORWAY handles the complexities of doors.

DOORWAY's 48K EXE file is written in Turbo Pascal with a good amount in-line assembly and linked MASM assembly. It has been tested at up to **38,400 bps** and is reported to handle speeds up to **56,400 bps** depending on your hardware configuration. Starting with version 2.0, DOORWAY supports direct screen writes and since that time the speed and compatibility have continually improved.

Version 2.10 added support for TBBS and Fossil drivers. It is now fully compatible with terminal programs like QModem, Pibterm, K9X, Zcom, Telix, Boyan, GT PowerCom, Commo, and Jaxcom. You'll also find DOORWAY works with the BBS programs TBBS, PCBoard, RBBS, Wildcat!, GT, Opus, RYBBS, QBBS, Forum, and Genesis. It also provides a way to register shareware programs on the spot, using a credit card and getting an authorizing code in return. DOORWAY modules do the actual changes to turn a shareware program into the fully registered version.

DOORWAY uses that system itself. You register with your credit card, then run the program with a "Register" parameter. When DOORWAY asks for your registration number, you input it and, Presto, you're registered. It's leaps and bounds ahead of sending in a check by mail and waiting a week or two to get your registered diskette. Dudley has licensed the code for this feature to QModem and several other programs including Wildcat! and PCB Verify. "Well," Dudley amends, "I guess you might call it a free license. I shared the code with them. But I got value in return."

John Friel of QModem has swapped code, Wildcat! recommends DOORWAY for just about everything involving a door, and Dudley, wife Donna, and son Sean have dinner regularly with PCB Verify's author, Curtis Kowalski, 18, who just started college. Kowalski was a neighborhood sysop (Premier BBS) and programmer. One of the other neighborhood sysops is Rickie Belitz, Data-Comp BBS. Belitz wrote C-KIT. It's a small world down there in Knoxville.

The three sysops have formed what they call **The Consortium**, which is a kind of co-op open to all responsible callers. For **$50** a year, billed at **$12.50** quarterly through any major credit card, a caller gets up to 70 minutes a day on each of the three boards, including private line access. Right now they have over **220** members and it's growing. Between the three sysops you get a programming specialist (Belitz), a very good, broad collection of files (Kowalski), and a specialist in graphics files and (this is Sean Dudley) Door programs. The three boards also cover more than **300** net mail conferences.

To sign up for the Consortium, you leave your credit card number at one of the boards. Then you sign

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onto any of the other boards within 30 days, drop into the Consortium door (of course!), and leave the registration number that the first board assigned you. Instant registration, DOORWAY style. It's automatic and painless.

You'd expect a program like that to gain wide acceptance and bring a reasonable income to the author, but Dudley's prior experience with shareware was discouraging. He'd put a couple of other programs on the boards, nothing as significant as DOORWAY, and money didn't pour in. So he issued DOORWAY as a form of crippleware. After you've had a door open for 10 minutes, a built-in timer closes it again. Registration removes the leash and you can set your own time limits, or eliminate them entirely if you want. Dudley judged that for $30, once you got used to having DOORWAY, people would register. Or they could use their doors in 10 minute chunks.

We wish he'd given the shareware route a fair trial with DOORWAY. For the record, we don't favor crippleware. Nobody puts a gun to anyone's head and tells them to become shareware authors. They can mortgage their house like Mitch Kapor, or sell their VW van like Steve Wozniak to raise money to market their product, if they don't like the lower risk, lower cost shareware route. Has time-binding DOORWAY actually increased registrations? Since Dudley never tried the non-crippled shareware route, there's no way to tell. In any case, registering is relatively easy. You leave a credit card number at the Data World BBS, which issues a registration number on the spot. You input the number to your copy of DOORWAY, and Presto, no time limits. As such, we view DOORWAY as a rather inexpensive commercial program the author makes widely available in crippled form on bulletin board systems.

The latest version of DOORWAY, ver. 2.12, includes its own host comm program, DWHOST. Written by Jack Kilday, DWHOST and DOORWAY give you a complete remote access capability. DWHOST is a small (36K) host program that answers the phone, prompts the user for a password and either terminates the call or drops the user into DOORWAY.

DOORWAY ver. 2.12 has hot-key capability, so you can pop up TSR programs like SideKick when you're at the remote end. DOORWAY can also monitor the behavior of other doors without itself doing the I/O redirection; for example, you can have DOORWAY terminate someone else's door when the clock runs out. It's easy for programmers to generate code and create customized applications with DOORWAY, so businesses are using the program to let them take orders on a BBS. And it comes with DW Transfer, a windowed transfer program that lets a user pass files back and forth using DOORWAY on one end.

Widely available in the file **DRWY212.ZIP**, Doorway, despite it's confused marketing heritage, provides a less expensive and more capable alternative to more widely known remote access programs such as PC-Anywhere and Carbon Copy. Marshal Dudley, 406 Monitor Lane, Knoxville, TN 37922. Data World BBS **615-966-3574**.

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THE QUARTERDECK (305) 462-1372 Ft. Lauderdale, Florida since 08/90. Sysop: Kelly Hulse. Using TBBS 2.1S with 1 line on MS-DOS 80286 with 500 MB storage. Everex at 2400 bps. $50-75 Annually fee. Carrying the PC-SIG on CD-ROM with 400 MEGS., message sections and games. Plus, our Marine Section with Satellite weather imagery of the world for download every day. Many new pictures daily. Watch us grow!

The P.D.S.L.O. BBS (516)938-6722 Hicksville, New York since 08/86. Sysop: James Toro. Using TBBS 2.1M with 18 lines on MS-DOS 80486 with 3400 MB storage. UDS at 9600 bps. $35 Annually fee. Home of "THE LIST" National BBS List, Multi-line Chat, Online Games. 2100+ PC-SIG Disks, 600+ PC-Blue Disks. 12000+ Uploaded Files. Infomat, Boardwatch, and USA Today Always Online. No Charge to Look Around!!

Paradise Network BBS (718)241-9007 Brooklyn, New York since 06/89. Sysop: Luce. Using DLX 5.0 with 16 lines on MS-DOS 80386 with 150 MB storage. Supra at 2400 bps. $65 Annually fee. Sign up with AMEX-MC-VISA. Latest Shareware. Unlimited downloads. Uploads not required. NYSE closing prices. 20+ Pubs (humor, medical, sexual) NYC dbases (Dining, Adult XXX Review). Private & Group chat. Two week free trial, PCP NYNYO 718. Adults Only.

Prime Connection (818)901-9400 Van Nuys, California since 10/90. Sysop: Derek Britz. Using Galacticomm with 32 lines on MS-DOS 80486 with 1200 MB storage. Supra at 2400 bps. $1.20 Hourly fee. Specializes in multi-player games and entertainment. Play with friends or the computer. UPI Newswire, Unltd downloads. Free demo upon sign-up. GIF Picture Files. Excellent selection of srvcs. Very friendly system. No telco charge from Starlink node 9206.

Bruce's Bar & Grill 203-236-3761 West Hartford, Connecticutt since 08/83. Sysop: Bruce Lomasky. Using TBBS 2.1M with 24 lines on MS-DOS 80386 with 300 MB storage. U.S. Robotics at 14400 bps. Bruce's Bar and Grill has a similar atmosphere to TV's "Cheers". Public, Private, and Over 21 Conference Sections. Many regulars stop by and chat each day. Many online games (some multiuser real time) and thousands of IBM files. Hayes/Telebit/USR 9600

Bucks Telematics 215-493-5242 Yardley, Pennsylvania since 12/83. Sysop: Richard Press, M.D.. Using TBBS 2.1 with 1 line on MS-DOS 80486 with 200 MB storage. U.S. Robotics at 38400 bps. $3 Monthly fee. Full-service BBS with local, national, and international echomail conferences and private messaging. Enjoy online publications and games, and download the latest shareware for your computer.

Sound Doctrine BBS 303-680-7209 Aurora, Colorado since 01/87. Sysop: Tim and Mike. Using TBBS 2.1M with 4 lines on MS-DOS 80286 with 200 MB storage. Supra at 2400 bps. For serious Christianity only! Where non-believers can ask the questions their Christian friends wish they wouldn't. Free items can be ordered while on-line. Look for the women's echo called Adam's Rib and our international echos. Find out who equals 666

The INDEX System TBBS 404-951-1540 Atlanta, Georgia since 04/84. Sysop: Rodney A. Aloia. Using TBBS 2.1M with 3 lines on MS-DOS 80386 with 120 MB storage. Hayes at 9600 bps. Largest CoCo BBS in the Southeast, also a SDNet/Works! Member. Home of "Today/TDBS", "The Online Catalog", and other TEBS/TBBS applications. USA Today News. Both Hayes Ultra 9600 and US Robotics HST nodes.

Cul-de-Sac Bar & Grill 508-429-1784 Holliston, Massachusetts since 03/85. Sysop: Pete White. Using TBBS 2.1M with 5 lines on MS-DOS 80286 with 380 MB storage. U.S. Robotics at 14400 bps. $45.00 Annually fee. The home of many TBBS/TDBS software packages, and an almost continuous beta site for many TBBS/TDBS software authors. Like Ben Cunningham's 10,000 message system with full screen editing and quoting, and Jeff Johnsons On-Line Sales Manager.

The Information Station BBS 708-790-4688 Glen Ellyn, IL since 11/86. Sysop: Pat Mulcahy. Using TBBS 2.1m with 1 line on MS-DOS 8088 with 40 MB storage. U.S. Robotics at 9600 bps. $25 Annually fee. All the fun and useful information you need! Enjoy Boardwatch Magazine, USA Today Decisionlines, FidoNet EchoMail areas, online games, a growing download section, Info-Mat, text file and database libraries, and Christian Fellowship. Call today!

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
ADA 9X Project Bulletin Board	(800)232-9925	ADA Programming Language Revisions and News	Chris Anderson/Susan Carlson	Eglin AFB ,FL
ADA Information Clearinghouse	(703)614-0215	Information on ADA Programming Language/Military Specs	Department of Defense	Washington ,D.C.
ANARC BBS	(913)345-1978	World Radio/TV Handbook - Short Wave Freq Lists/Scheds.	Assoc. of North American Radio Clubs	,KS
Applied Modeling Research RBBS	(919)541-1325	Environmental Protection Agency Atmospheric Models	William Peterson/EPA	Hurdle Mills ,NC
Aquila BBS	(708)820-8344	2 GB 9 Nodes Fidonet/Interlink/Metronet MCe IL/CHI	Kevin Behrens/Steve Williams/Chris Babb	Aurora ,IL
Ashton-Tate Technical Support	(213)324-2188	dBase and Multimate Support - CIS HOST NAME:ATBBS	Ashton-Tate Corporation	Torrance ,CA
AST Technical Services BBS	(714)727-4723	Superb support system for AST Computer Products	AST Research Inc.	Irvine ,CA
AT&T Support BBS	(201)769-6397	Support for PC 6300 and Other AT&T PC Models	American Telephone/Telegraph PC Division	Plainfield ,NJ
ATI Support BBS	(416)756-4591	Support for ATI Modems and Video Cards	ATI Technologies	Scarborough ,Ontario
Audiophile Network	(818)988-0452	High-end Audio Components, Music, Video Reviews	Guy Hickey/Quatre Speakers	Van Nuys ,CA
Automobile Consumer Services	(513)624-0552	New Car Pricing Reports - Used Car Value Reports	Automobile Consumer Services Inc.	Cincinnati ,OH
BBS Press Service	(913)478-9239	Home of INFOMAT Online Weekly PC News Magazine	Alan Bechtold/BBS Press Service	Topeka ,KS
BellSouth's TUG Gateway	(404)594-3964	Transtext Universal Gateway - Atlanta Journal-Constitution	BellSouth	Atlanta ,GA
Best Friends BBS	(714)832-5902	DLX Multiline Chat/Match Social/Sexual	Ann and Joe Wiseman	Fountain Valley ,CA
Big Peach BBS	(404)446-6650	Home of Automenu and Treeview Software	Marshall Magee/Magee Enterprises	Norcross ,GA
Big Sky Telegraph	(406)683-7680	Education/Econ Development Info to Montana rural Communities	Montanna Rural Education Network	Dillon ,MT
Bird Info Network	(303)423-9775	Breeding, Raising, Taming, Exotic Birds	Terry Rune/Dave McClauggage	Arvada ,CO
Bit Bucket Software BBS 104/501	(303)693-4317	Home of BinkleyTerm Mail Software	Bob Hartman	Aurora ,CO
BMUG BBS	(415)849-2684	Support for Macintosh owners - files - conferences.	Berkeley Macintosh Users Group	Berkeley ,CA
Book BBS	(215)657-6130	Information on 2000 Computer Books - 800 order number	Business & Computer Book Store	Willow Grove ,PA
Brown Bag Software BBS	(408)371-7654	Power Menu/ PC Outline Software Support	Brown Bag Software	Campbell ,CA
Bruce's Bar & Grill	(203)236-3761	24-line Social System - Chat - Games - Downloads	Bruce Lomasky	West Hartford ,CT
Bucks Telematics 273/201	(215)493-5242	Local, National, International Message Conferences	Richard Press	Yardley ,PA
ButtonWare BBS	(206)454-2629	PC-File dB / PC-Calc / PC-Type Software Support	Jim Button/ButtonWare	Bellevue ,WA
C.A.R.L Library Service	(303)863-1350	Citations to 2 Million Texts in Colorado Library System FREE	Colorado Alliance of Research Libraries	Denver ,CO
Cape Cod Bungalow 101/870	(508)833-1794	Multiline Service - Shopping Mall - Games - Tourist Info	Crawford Communications/Daniel Crawford	Cape Cod ,MA
Castle Tabby 107/412	(201)988-0706	Home of TABBY Fidonet Interface Program for Apple Macintosh	Michael E. Connick	Bradley Beach ,NJ
Census Bureau Office Automation	(301)763-4576	Microcomputers and Office Automation	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Census Bureau Personnel Division	(301)763-4574	Employment Opportunities Within the Census Bureau	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Channel 1	(617)354-8873	45-line PCBoard System - 3.7 GB Files - 250 Msg Conferences	Brian Miller/Tess Heder	Cambridge ,MA
Chicago SysLink	(312)622-4442	Special Interest Areas for Ferret/Pet Owners.TRS80/Aviation	George Matyaszek	Chicago ,IL
Classi Computer Fieds	(317)359-5199	Online System for Classified Advertisements	Steve Edsall/Trader Newspaper	Indiannapolis ,IN
Clean Air BBS	(408)298-4277	Environmental Health/Cigarette Smoking Topics	American Lung Association/ Sheila Blash	San Jose ,CA
Cleveland Freenet	(216)368-3888	Cleveland City Information/Ohio Governor's Office Online	Case Western University/AT&T/Ohio Bell	Cleveland ,OH
COCONET	(619)456-0815	COCONET Support/Demo - Hires Graphics BBS for Unix Systems	Brian and Patricia Dear	La Jolla ,CA
Comm-Post, The 104/666	(303)534-4646	Astronomy - 725+ MB of Files	Brian Bartee	Denver ,CO
Compact Audio Disk Exchange	(415)824-7603	Buy/Sell/Trade Compact Audio Disks Online	Wayne Gregori	San Francisco ,CA
CompuCom Customer Support BBS	(408)738-4990	Support for CompuComm SpeedModem - 9600 bps - $279	CompuCom	Sunnyvale ,CA
Computer Business Services	(714)396-0014	Computer Columnist John C. Dvorak's office BBS	John C. Dvorak and Nick Anis Jr.	Diamond Bar ,CA
Computer Garden	(301)546-1508	Treasure Hunting - Metal Detectors - Online Catalog	Milford P. Webster	Salisbury ,MD
Computerized Bulletin Board Sys	(708)849-1132	First Electronic Bulletin Board - Creator of XMODEM Protocol	Ward Christensen	Chicago ,IL
Computing Canada Online	(416)497-5263	Adjunct to Excellent Canadian PC Newspaper	Computing Canada Newspaper	Willowdale ,Ontario
Corporate Data Exchange (CDX)	(609)683-4422	PR Newswire/ Business Wire. Logon: hello user.cdx	LaFountain Research Corp/Tad LaFountain	Princeton ,NJ
Crosstalk Communications BBS	(404)740-8428	Product Support for Crosstalk for Windows/MK4/XVI	Digital Communications Associates	Roswell ,GA
CTC IEEE Employment Database	(508)263-3857	Online Database of 20,000 Resumes for Engineering	Career Technologies Corporation	Andover ,MA
Cul-de-Sac Bar & Grill	(508)429-1784	Multiline Service - Ham Radio - Humor - Echomail - Games	Pete White	Holliston ,MA
CyLink	(719)520-5000	Online Chat/Multiplayer Interactive Games - 12 lines	Klaus Dimmler	Colorado Springs ,CO
Dante Project BBS	(603)643-6310	Commentary/Research on Dante's Divinia Comedia	Dartmouth College	Hanover ,NH
Data Point	(501)442-8777	Online Publications - Excellent TBBS System	Gary Funk	Fayetteville ,AR

DataLink RBBS System	(214)394-7438	Weather Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA	Dallas Remote Imaging Group/Jeff Wallach	Carrollton ,TX
DayDreamer BBS	886-2-3122452	Ten Line Remote Access BBS - Largest BBS in Taiwan	Allen Wu	Taipei ,Taiwan
Denver Deaf-Net	(303)989-9245	Hearing Impaired/Computing	David Sheneman	Lakewood ,CO
Depeche BBS	(702)674-2816	Online Text - Closing Stocks - USA Today - Sports Stats	Jerry Walters	Sparks ,NV
East Bay X-Change 372/888	(803)556-7485	Home of XRS Offline Mail Reader	Mike Ratledge	McClellanville ,SC
Echo	(212)989-8411	New York Emulation of THE WELL - Unix CAUCUS Conferencing	Stacy Horn/Echo Communications Group	New York ,NY
Economic Bulletin Board	(202)377-3870	Economic Statistics/GNP/CPI/Employment, Trade Opportunities	US Department of Commerce	Springfield ,VA
Eesti BBS #1	7 0142 422583	First BBS in USSR - Estonian Business Issues	Lembit Pirn/Estonian Business Assoc.	Tallinn ,Estonia
Electic Dialectic BBS	(708)705-6774	40 Online Game Doors - Graphic Files	Bruce Johnson	Palatine ,IL
Energy Info Admin E-Publications	(202)586-8658	Variety of Petroleum/Coal/Electricity Energy Statistics	US Department of Energy	Washington ,D.C.
Event Horizons	(503)697-5100	32 Line Digitized Graphics Image Library - Adult .GIF files	Jim Maxey	Lake Oswego ,OR
EXEC-PC	(414)789-4210	Largest BBS in US - 90 Lines - 70,000 files - 4 Gigabytes	Bob Mahoney	Shorewood ,WI
Executive Network	(914)667-4567	Interlink Netmail National Host - Multiline PCBoard System	Andy Keeves	Mt. Vernon ,NY
Farwest BBS	(604)381-3934	Large Western Canada Galacticomm Info System	Ren L'Ecuyer	Victoria ,BC
FCC Public Access Link	(301)725-1072	Equipment Authorization Status Advisory Service	Federal Communications Commission	Columbia ,MD
Federal Job Information Center	(313)226-4423	Federal Job Opportunity Lists available online	US Office of Personnel Management	Detroit ,MI
FEDLINK ALIX II	(202)707-9656	Info on Federal Libraries -Excerpts Library of Congress News	Federal Library Information Network	Washington ,D.C.
Fido Software BBS 1:125/111	(415)863-2739	The First Fido BBS and home of Fido BBS 12s	Tom Jennings	San Francisco ,CA
Fido Tech Stand	31-30-735900	Fidonet Technical Information for Holland	J.J. van der Maas	Utrecht ,Holland
File Cabinet BBS	(215)678-9854	10-line PCBoard System. 959 MB-100 Conferences-80,000 files	Dan Bair	Wyomissing ,PA
FOG City BBS 125/10	(415)863-9697	Gay Community BBS - AIDS Info - Desktop Publishing - MACs	Bill Essex	San Francisco ,CA
Fred the Computer	(508)872-8461	Newspaper BBS. Wierdnet Newswire. List of MA Libraries	Middlesex News	Framingham ,MA
GDP Technologies	(303)673-9470	Outstanding IBM Shareware on a small system	Tom Getty's	Lafayette ,CO
GLIB	(703)578-4542	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps	Community Educational Svcs. Foundation	Arlington ,VA
Greenpeace Environet	(415)512-9108	Ecological and Peace Issues - Disarmament/Toxics/Wildlife	Dick Dillman/Greenpeace	,
GT PowerComm BBS	(713)772-2090	Home of GT Power Communications Software	Paul Meiners/P&M Software	Houston ,TX
Hay Locator	(317)494-6643	Database of Hay/Straw Suppliers and Buyers	Purdue Univ. Agricultural Computer Net	,.
Hayes Advanced Systems Support	(800)874-2937	Customer Support Line for Hayes Customers. V-series/Ultra	Hayes Microcomputer Products	Norcross ,GA
Herpnet/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish	Mark Miller	Philadelphia ,PA
HH Info-Net BBS	(203)246-3747	MS Windows and OS/2 Files our specialty	Lee Winsor	New Hartford ,CT
HOLLIS	(617)495-9500	Harvard On-Line Library Information System - 7E1 VT100	Harvard University	Cambridge ,MA
IBM National Support Center BBS	(404)835-5300	IBM PC User Groups Database - Newsletter Exchange	IBM National Support Center	Atlanta ,GA
Illuminati	(512)447-4449	GURPS Cyberpunk - Seized by SS during Operation Sun Devil	Steve Jackson Games	Austin ,TX
Imaging GraphicsLine BBS	(415)968-1834	Paradise/Verticom Graphics Products - .GIFs	Western Digital	Mountain View ,CA
Inbound/Outbound/Teleconnect	(212)989-4675	Telephone Sales Trade Magazine Online Service	Harry Newton Publications	New York ,NY
Index Systems	(404)951-1540	Excellent list of Atlanta BBS systems online	Rodney Aloia	Marietta ,GA
Infinity World	(606)271-6556	8 line Galacticomm System - Many good text publications	Daniel Diachun	Lexington ,KY
Intel PCEO Support BBS	(503)645-6275	Support for Intel PC Products - Inboard 386/AboveBoard 286	Intel Corporation PCEO Division	Hillsborough ,OR
Invention Factory	(212)431-1194	32 Lines - 100 Directories - Good Shareware Catalog 3.2 GB	Mike Sussell	New York ,NY
Investor's Online Data	(206)285-5359	Online Investment/Stock Market Information/Tech Analysis	Don Shepherdson	Bellevue ,WA
JAG-NET	(703)325-0748	Navy Judge Advocate General's Information Network	US. Dept. of Navy / Chris Buechler	Arlington ,VA
JDR Microdevices BBS	(408)559-0253	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes	JDR Microdevices	San Jose ,CA
JOBBS	(404)992-8937	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.	Alpha Systems Inc./Bill Griffin	Roswell ,GA
Joe's Place BBS 1:367/15.6	(809)254-3566	Colorful Spitfire BBS in Puerto Rico	Jose Frias	Lajas ,PR
KIMBERELY BBS	(612)340-2489	Prime Rate-Fed Funds-T-Bill-Discount Rate-Economic Data	Federal Reserve Bank of Minneapolis	Minneapolis ,MN
King's Market Bookshop	(303)665-6091	Books, Writers, On-line Adventure Games	Jim Burt	Boulder ,CO
LANtastic BBS	(602)293-8065	Support for LANtastic local area network	Artisoft Inc.	Tucson ,AZ
Late Night BBS	(315)592-7300	Home of GENESIS BBS Software - Multinode LANable.	Carter Downer	Hannibal ,NY
Late Night Software 125/555	(415)695-0759	Home of UFGATE - Software to connect PCs to UUCP/Usenet	Tim Pozar	San Francisco ,CA
Leading Edge Auto Info Line	(508)836-3967	Support for Leading Edge Computer Owners	Leading Edge Computer	Westborough ,MA
LegalEase	(509)326-3238	Legal Issues/Forms - Law BBS List	Bill Sorcinelli	Spokane ,WA
LUMINA	(612)626-2206	Libraries of Univ.of Minnesota Integrated Net Access7E1VT100	University of Minnesota	Twin Cities ,MN
Maxi-Micro TickerScreen	(212)809-1160	2000 Closing Stock Quotes/Market Research/Order Entry	Max Ule & Company	New York ,NY
Maxtor Technical Support BBS	(303)678-2020	Installation/Troubleshooting/Support for Maxtor Hard Disks	Maxtor Corp./Chris Bowers	Longmont ,CO
McAfee Associates BBS	(408)988-4004	Computer Virus Information - VIRUSCAN and CLEANUP Programs	John McAfee/CVIA	Santa Clara ,CA
Micro Foundry, The	(415)598-0398	2.2 GB Downloads - Your Online Software Source - Boardwatch	Thomas Nelson/Clockwork Software	San Jose ,CA

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NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - FEBRUARY 1991

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
Micro Message Service	(919)779-6674	USA Today/Boxoffice Magazine - Large Download Area	Mike Stroud	Raleigh ,NC
Microlink B	(303)972-9600	1 Gigabyte of IBM Software - Multiline - USA Today News	Girard Westerberg	Littleton ,CO
Microrim Technical Support BBS	(206)649-9836	Support for Popular R:Base Relational Data Base System	Microrim Corporation	Redmond ,WA
Microsoft Product Support BBS	(206)646-9145	Word/Works/Multiplan/Flight Simulator Application Notes	Microsoft Corp/Scott J. Honaker	Bellevue ,WA
Minnesota Spacenet	(612)920-5566	Minnesota Space Frontier Society - NASA News	Ben Husset	Minneapolis ,MN
Monu-CAD BBS	(607)264-3307	CAD Designs for Tombstones, Monuments, and Memorials	Jim Fallveno/Monumental Computer App.	Cherry Valley ,NY
NARDAC BBS	(804)445-1627	Zenith Computer Support - List of Federal Micro User Groups	Navy Regional Data Automation Center	NAS Norfolk ,VA
NASA Headquarters Info Tech	(202)453-9008	Shareware and Technical Info for NASA PC users.	National Aeronautical and Space Admin.	Washington ,DC
NASA Spacelink	(205)895-0028	NASA Educational Affairs Div. - Flight Data/Space History	Marshall Space Flight Center	Huntsville ,AL
Nashville Exchange	(615)383-0727	8 line TBBS - Games/TDBS Software Development	Ben Cunningham	Nashville ,TN
National Agricultural Library	(301)344-8510	Agricultural Info/Research Resources	US Department of Agriculture	Beltsville ,MD
National Genealogical BBS	(703)528-2612	Family History - Genealogical Research - Gravestone Haunting	National Genealogical Society	Arlington ,VA
National Inst.Science Technology	(301)948-5717	Micro Elect.Info Exchange - Virus Protection/Security Issues	National Inst. of Science and Technology	Gaithersburg ,MD
Nautilus BBS	(316)365-7631	32 Line TBBS with 5 GB of Files on 80486. CD/WORMS	Nautilus Communications	Iola ,KS
NAVWESA	(202)433-6639	Naval Weapons Engineering Support	Dept. of Navy / Bill Walsh	Washinton, D.C. ,.
Network World Bulletin Board	(508)620-1178	LAN and WAN Issues and Technology	Network World Magazine/CW Communications	Framingham ,MA
Neuropsychology Bound 157/3	(216)356-1431	Support Groups for Disabled/Physically Impaired	Butch Walker	Rocky River ,OH
NIST ACTS	(303)494-4775	Automated Computer Telephone Service - Sync PC to NBS Time	Nat. Institute for Standards/Technology	Boulder ,CO
NOAA Space Environment Lab	(303)497-5042	Solar Flare/Geomagnetic Data Online	National Oceanographic/Atmospheric Admin	Boulder ,CO
NoGate Consulting	(616)455-5179	Home of PAK archive utility	Mike Neuhaus Gus Smedstad	Grand Rapids ,MI
Numisnet	(301)498-8205	Collecting of Coins, Medals, and Exonumia	The Mitchell Group	Laurel ,MD
OASIS BBS	(404)627-2662	Home of Atlanta Bulletin Board List - ABBL	Robert Orr/Online Atlanta Society	Decatur ,GA
Occupational Health/Safety BBS	(212)385-2034	Job Safety Issues for Artists, Musicians, Entertainers	Mike McCann/Center for Safety in Arts	New York ,NY
Odyssey	(818)358-6968	Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Monrovia ,CA
OERI BBS	(800)222-4922	Educational Statistics and Data - Performance Stats -	US Department of Education	Washington ,D.C.
Old Colorado City Communications	(719)632-4111	Political Discussions - Unix UUCP Public Access - Multiline	Dave Hughes	Colorado Springs ,CO
Online Computer Bookstore	(408)744-0514	Online Database/Orders for Computer Book Titles	Austin Murphey & Associates Book Store	Sunnyvale ,CA
Online Now	(807)345-5522	5 CD-ROMS plus 3MB New Software per Week	Gary Walsh/Tom Haavisto	Thunder Bay ,Ontario
Online Sports	(716)688-6537	Large base of Sports Stats for Pro Gamblers	Terry McCraith	Williamsville ,NY
Online With Hayes	(404)446-6336	Hayes Public Bulletin Board - Conferences/SIGS/Support	Hayes Microcomputer Products	Norcross ,GA
Oracle PC	6108 260-6222	South Australian TBBS Multiline System	Don Crago	Pooraka South Austral
Oracomm Support BBS	(619)346-1608	Sales and Support for Oracomm Multiline BBS Software	Surf Computer Services	Rancho Mirage ,CA
Osprey's Nest	(301)989-9036	Birdwatching, Bird feeding, Naturalist/Ecology Issues	Fran and Norm Saunders	Colesville ,MD
P.D.S.L.O. BBS	(516)938-6722	Home of THE LIST National BBS List	James Toro	Hicksville ,NY
PacComm BBS	(813)874-3078	Packet Radio Equipment Supplier - TNC/PSK Modems	Gwyn Reedy/PacCom Inc.	Tampa ,FL
PC Ohio	(216)381-3320	Shareware library with 100% USR HST access - 5 years up	Norm Henke	Cleveland ,OH
PC-Link Central	(812)855-7252	University PCBoard System. Home of A86/D86 Assembly Lang.	Indianna University/Eric Isaacson	Bloomington ,IN
PDSLO BBS	(516)938-6722	Home of THELIST - Listing of 3000 Nationwide BBS Systems	Jim Toro	Hicksville ,NY
PHYSICS Forum BBS	(413)545-1959	Physics and Astronomical Sciences	Univ.of Mass. Dept. of Physics/Astronomy	Amherst ,MA
Pinecliffe BBS 104/28	(303)642-7463	Large Shareware Library/Echomail Conferences since 1985	Craig Baker	Pinecliffe ,CO
PKWare BBS	(414)352-7176	Home of PKZIP 1.10 Compression Utility	Phil Katz/PKWare Incorporated	Glendale ,WI
Pleasure Dome	(804)490-5878	Sexually Explicit Fantasy Chat System - Adults only	Tom Terrific	Tidewater ,VA
Popular Mechanics Online BBS	(212)582-8369	Automotive, Home/Shop, Electronics/Photography, Science	Popular Mechanics Magazine	New York ,NY
Practical Peripherals BBS	(818)706-2467	Support BBS for Practical Peripherals Modems	Practical Peripherals	West Lake Village ,CA
ProComm Support BBS	(314)474-8477	Home of ProComm 2.4.3 and ProComm Plus Comm Prgrms	Thomas Smith/DataStorm Technologies Inc.	Columbia ,MO
Public Brand Software BBS	(317)856-2087	Commercial Shareware Vendor	Public Brand Software	Indianapolis ,IN
Radio Electronics BBS	(516)293-2283	Radio Electronics Magazine Online Adjunct	Gernsback Publications	Farmingdale ,NY
Random Access Information Svc.	(503)761-8100	10500 IBM/MAC/AMIGA Files - 3000 MaxiPic Graphics	Janice Stevens	Portland ,OR
RGB Computing	(519)824-3997	Multiline Information Service/PC Sales/Large File Selection.	Ronald Spencer - RGB Computing	Guelph ,Ontario

Rose Media	(416)733-2780	Excellent Canadian PC Board System-Publications/Conferences
Rusty & Edies	(216)726-0737	Large ML PCBoard run by Husband and Wife - NFL/Tradewars
Salt Air BBS	(801)261-8976	Home of PCBoard BBS Software - National List of PCB Sys
Science Resource Studies BBS	(202)634-1764	Federal R&D Budget - Technical Labor Market Statistics
Scooters Scientific Exchange	(215)657-5586	Biotechnology/Chemistry/Physics/Astronomy/Space Sciences
SEAboard!	(201)473-1991	Support system for ARC, SEADOG, and AXE software.
Seagate Technical Support BBS	(408)438-8771	Installation and Specifications for Hard Drive Models
SemWare Support BBS	(404)641-8968	Home of QEdit - A Superb Shareware Text Editor
Short Line 104/36	(303)778-7312	Varied Subjects, Fidonet, BinkleyTerm
Sistema Profesional Informacion	525 590-5988	Largest BBS in Mexico - Spanish Language TBBS
SNAFU BBS	(202)543-0883	Advice for Government Whistle Blowers - Fouled DOD Programs
Society for Technical Comm. BBS	(703)522-3299	STC Job Service, Freelance Registry - Technical Writers
Sonshine Express BBS	(408)946-7362	Family Oriented Christian BBS
Sound Advice BBS	(816)436-4516	Twenty Line PCBoard with 2 Gigabytes Storage - HST Modems
Southern Arizona Birding BBS	(602)881-4280	Rare Bird Alerts Online - Birdwatching in Southwest
Star-Link Network BBS	(718)972-6099	9-nodes, 2.1GB, Ilink, 75,000 programs
State and Local Emergency Mgmt.	(202)646-2887	Hazardous Materials/National Dam Watch/Emergency Info
Stillwaters BBS	(708)403-2826	Home of Stillwaters Chicagoland BBS List - over 500 systems
Take 3 BBS	(602)482-1001	Reviews of Movies/Videos/ Film Industry Job Clearinghouse
Talk Channel	(818)506-0620	DLX-Based Multiline Chat/Talk Service - Sexual Orientation
TAXACOM	(716)896-7581	Botany, Herbaria, FLORA ONLINE Newsletter, Latin Translation
TBBS Net 104/23	(303)699-9248	Home of The Bread Board System (TBBS) BBS Software
Telegodzilla	(503)621-3746	Home of ZModem File Transfer Protocol/YModem/YAM
Telix Support BBS	(416)439-8293	Support Service for Telix Communications Software
That Old Frog's Swamp	(715)362-3895	Zen Bhuddist Monk/PC Consultant
The Back Room	(718)849-1614	America's Largest Exclusively Gay DB - Home of Gaycomm
The Business BBS	(213)477-0408	Microsoft Windows Support
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